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Commonwealth of Kentucky
Martha Layne Collins, Governor

Prepared by the
Center for Business and Economic Research
College of Business & Economics
University of Kentucky
for the
Governor's Financial Policy Council

ANNUAL ECONOMIC REPORT—1986
COMMONWEALTH OF KENTUCKY

AN ANALYSIS OF THE KENTUCKY ECONOMY: CHARACTERISTICS AND CHANGES

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FOREWORD

The *Annual Economic Report—1986*, published by the Center for Business and Economic Research (CBER) in the College of Business and Economics of the University of Kentucky, is the latest in a series of annual reports prepared to provide decision makers throughout Kentucky with current and accurate information about the state and region's economy. Is Kentucky following today's national or regional trends? To what extent are the characteristics of Kentucky's economy specific to Kentucky? How has Kentucky's economy changed over the years? This report highlights the socio-economic and financial changes occurring in the state relative to the region and nation over the past few decades to answer these and other questions. By furnishing insights into the state's economy, both past and present, the report provides a basis for analyzing where Kentucky may be headed in the future.

The publication of this report fulfills in part CBER's mandate to collect, maintain, analyze and disseminate Kentucky economic data. All data used in the report are the most current annual estimates available, and most are included in CBER's Kentucky Economic Information System. The opinions expressed here are, of course, those of the authors, and do not necessarily reflect the positions or opinions of the College of Business and Economics or the University of Kentucky.

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Director, Center for Business and
Economic Research

AN ANALYSIS OF THE KENTUCKY ECONOMY: CHARACTERISTICS AND CHANGES

by Don M. Soule*

Annual Economic Report—1986 of the Commonwealth of Kentucky is presented in sixteen sections grouped into four parts.

Part I analyzes such general economic measures as: population size and characteristics; labor force, employment, unemployment, and average earnings; personal income levels and sources; employment and income by major industry groups; and production and income in the coal, agricultural, and construction industries.

Part II is a detailed analysis of employment in major industry groups and subgroups, with subgroups arranged according to relative size and rates of growth. Special emphasis is placed on goods-producing (manufacturing, mining and construction) as contrasted with services-producing (trade, finance/insurance/real estate, services, transportation, and government) industry groups and subgroups.

Part III examines the expenditures, revenues, federal aid, and debt financing experiences of state plus local governments. Of particular interest are the levels and changes of fiscal performance in Kentucky and whether they are higher or lower, or faster or slower, than similar levels and changes in the nation and in some cases the Southeast.

Part IV, a special study of the financing of public transportation, concerns levels and changes in Kentucky highway finance over the years and also the similarities and differences of the Kentucky experiences as compared with that of the nation.

The most important difference between this year's report and those for previous years is the use of *revised* employment and income data as reported by the Bureau of Economic Analysis (BEA) in the U.S. Department of Commerce. These revised data present a less favorable picture of the Kentucky economy than previously had been described in these annual economic reports. In general, the revised data show that while Kentucky's performance in *actual* values was about the same as previously reported, upward adjustments were made in data for the 50 states as a group. The result is that Kentucky's *relative* position (that is, as a percentage of the 50-state average) now appears to be lower than suggested by the previously reported data.

Most of the comparisons in this report are for the 16-year period 1970-1985 (fiscal years), although in some cases only selected years from this period are shown while in other cases several previous census years (1950, 1960, etc.) are shown. Comparison of one state with the group of 50 states presents the problem of great difference in the size of the amounts examined. For example, Kentucky's total per-

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sonal income in 1985 was only about 1.2 percent of the total personal income of the group of 50 states; stated differently, the 50-state total was 82 times that of the Kentucky total. But when converted to per capita amounts (that is, amounts per person on the average), Kentucky's per capita personal income is shown to be 80 percent of the national average and thus allows meaningful comparison.

For analysis and comparison of levels and changes in economic activity, two main methods of comparison are used throughout this report: subcategories are shown as percentages of totals; and annual amounts for subcategories and totals are shown as percentages of their 1980 amounts (that is numbers are indexed with 1980 equal to 100 percent). These two methods of comparison are complementary in that an economic change insufficiently identified by one method is clarified by the other. For example, total income measured in dollars might increase from 800 to 900 over a period, while a particular part of total income might increase from 60 to 65 over the same period. Expressed as a percentage of total, the part declined from 7.5 to 7.2 percent of total. But when both total and part are shown as index numbers based on the first year, the total increased from 100 to 112.5 percent of the first year amount while the part increased from 100 to 108.3 percent. Both the total and the part increased in absolute amounts, as shown by the index numbers, while the part decreased in relative importance as shown by its becoming a smaller percentage of the total. This diminished importance of the part is also suggested by its index value being less than that for the total in the ending year (108.3 compared with 112.5). The index numbers in this year's report are based on 1980 instead of 1970 as in previous years.

The statistical information used in this report comes from such governmental agencies as the U.S. Department of Commerce through its Bureau of Economic Analysis and Bureau of the Census, and the Kentucky Cabinets for Revenue, Finance and Administration, Transportation, and Human Resources. Comparison of Kentucky with the 50 states can be done only if the federal-source data are used. While Kentucky-source data often are more detailed or recent, the lack of comparable data for the other states is a serious limitation. The federal-source data are used in this report because of their broad coverage using uniform definitions. All or nearly all of the original or "raw" data used in this report are available in the computerized Kentucky Economic Information System (KEIS), maintained by the Center for Business and Economic Research.

Because the economic picture presented for Kentucky in this year's report is not a happy one, the analysis and commentary might be interpreted as being unnecessarily critical or even derogatory as concerns Kentucky. Nothing of this nature is intended. The report is an attempt to picture the Kentucky economy as it actually is, using standard analytical methods to identify and highlight the differences between Kentucky and the group of 50 states as to levels and changes in economic characteristics using data published by reliable sources. An attempt is made to include all relevant comparisons, whether or not Kentucky's performance has been superior or inferior to that of the group of 50 states. Identification of both the

favorable and unfavorable features is important for further efforts toward improvement.

Because the latest annual data used in this report are for either calendar or fiscal year 1985, no coverage is included for the period since December 31, 1985 for the income and employment data, and since June 30, 1985 for the governmental finance data. It is possible, therefore, that recent developments have changed the economic picture. This is especially possible as regards actions of the 1986 Kentucky General Assembly. For example, the five cents per gallon increase in the motor vehicle fuel tax rate could possibly improve Kentucky's tax and expenditure performance relative to that of the 50 states. These are valid criticisms of this annual economic report. Nevertheless, some of the expected improvement in Kentucky's relative position in governmental finance would likely be offset by legislated tax and expenditure increases occurring in other states. For this reason, a look at 1986 data for Kentucky (which might be available) without comparison with similar data for the 50 states (which are not yet published) could possibly be misleading. Relative positions continually change among the states from year to year because of legislation and other forces, and reports based on published statistical data necessarily omit the latest one or two years. The picture of Kentucky's economic performance presented in this annual economic report is useful for its comparison of Kentucky with the 50 states and its comparison of performance over periods of a decade or more.

PART I
GENERAL ECONOMIC COMPARISONS

Introduction

Part I contains the first seven of the sixteen sections of this report. These seven sections concern general economic characteristics related to population, income, and employment. Kentucky is compared to the group of 50 states and, in some cases, with the group of 12 Southeastern states. Both employment and income comparisons are made for the total economy and its major parts, but the detailed analysis of changes in the major industry groups uses only employment data. The major industry groups are analyzed in Part I according to general levels and changes, with the intention of identifying major characteristics and changes. Analysis of details by industry subgroups is presented in Part II.

The statistical information used in the income analysis is according to definitions established by the major reporting agency, the Bureau of Economic Analysis (BEA) of the U.S. Department of Commerce. BEA's terminology and definitions may differ from the same or similar terms in common usage. A Glossary is presented at the end of the report to inform readers of the exact meaning of specific BEA terms, as well as of terms used by the other data source agencies referenced in Part I.

1. Population Characteristics

Three main groups of population comparisons are presented in this section, dealing with levels and changes in number of persons, movement among states (net migration), age, race, and educational attainment. In addition, Kentucky net migration is compared with per capita personal income changes over the years. Kentucky is compared with the nation and the Southeastern states.

Table 1-A compares Kentucky, the nation, and the Southeast according to population size for census years from 1920 through 1970 and annually from 1980 through 1985. Increases occurred for each group in every year shown. Of particular interest are the relative size of Kentucky compared with the nation and the Southeast, and how these relationships have changed over the years. Kentucky's population was 2.3 percent of the nation's and 9.9 percent of the Southeast's in 1920 but declined to only 1.6 percent of the nation's and only 6.6 percent of the Southeast's in 1985. The Southeast's population increased relative to the nation during the same period from 23.0 percent of the U.S. population in 1920 to 23.7 percent in 1985. Population growth between 1920 and 1985 was 125.8 percent for the nation, 132.4 percent for the Southeast, and only 54.2 percent

TABLE 1-A

Population Size, Kentucky, the Southeast Region and the United States, 1920-1985

	Total Population			State Population as % of United States	
Year	United States	Kentucky	Southeast	Kentucky	Southeast
		(Millions)		(Percent)	
1920	105.7	2.417	24.33	2.287 %	23.02 %
1930	123.1	2.623	27.31	2.131	22.19
1940	132.0	2.859	30.28	2.167	22.95
1950	151.2	2.936	33.86	1.941	22.39
1960	180.0	3.041	38.89	1.690	21.61
1970	203.8	3.231	43.97	1.585	21.58
1980	227.3	3.665	52.89	1.613	23.28
1981	229.6	3.676	53.69	1.601	23.38
1982	232.0	3.694	54.38	1.592	23.44
1983	234.3	3.714	55.06	1.585	23.50
1984	236.5	3.720	55.79	1.573	23.59
1985	238.7	3.726	56.55	1.561	23.69

Source: U.S. Department of Commerce, Bureau of Economic Analysis; data for 1920 from *Statistical Abstract of the United States 1985*, Bureau of the Census.

Note: Alaska and Hawaii not included in U.S. totals prior to 1958. States of the Southeast are Alabama, Arkansas, Florida, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, South Carolina, Tennessee, Virginia, and West Virginia.

for Kentucky. Thus, Kentucky's population growth has not only been less than that of the nation and the Southeast but the Southeast's growth exceeded that of the nation. The data in Table 1-A leave no doubt that Kentucky's population, while growing in absolute size, has been shrinking relative to the population of the nation and the Southeast.

Other interesting aspects of population are age distribution, racial distribution, and educational attainment of the adult population. These dimensions are shown in Table 1-B for Kentucky compared with the nation for the census years 1960, 1970, and 1980. The population 17 years and younger plus the population age 65 and over, i.e., the "dependent population," can be compared with the "work-potential population" aged 18 to 64 years. In a general sense, the work-potential population supports the dependent population. Therefore, a larger-than-average percentage of dependent population (and therefore a smaller-than-average percentage of work-potential population) is an unfavorable sign relative to the potential for producing income.

In comparing dependent versus independent population size, Kentucky fares unfavorably relative to the nation, with a larger-than-average percentage of dependent population in all three years shown. The gap, however, narrows between the Kentucky and national percentages between 1960 and 1980. In 1960, Ken-

TABLE 1-B

Selected Age, Race, and Educational Attainment Data: Kentucky and United States, 1960, 1970, and 1980

(Amounts as Percentages of Relevant Population Totals)

	1960		1970		1980	
Population Characteristics	Kentucky	United States	Kentucky	United States	Kentucky	United States
Age:						
17 & below + 65 & over	47.2%	45.0%	45.0%	44.0%	40.8%	39.4%
18-64	52.8	55.0	55.0	56.0	59.2	60.6
Race:						
white	92.8	88.6	92.6	87.4	92.3	83.1
black	7.1	10.5	7.2	11.1	7.1	11.7
other	0.1	0.9	0.2	1.5	0.6	5.2
Educational Attainment (age 25 & over):						
12 years or more	27.6	41.1	38.5	52.3	53.1	66.5
16 years or more	4.9	7.7	7.2	10.7	11.1	16.2

Source: *County and City Data Book, 1983; State and Metropolitan Area Data Book, 1986*

Note: Educational attainment is computed as a percentage of total number of persons age 25 and over, and not as a percentage of total population.

tucky's percentage of dependent population was 2.2 percentage points larger than that of the nation, while in 1980 this gap was reduced to 1.4 points.

With regard to racial distribution, Kentucky has a larger percentage of population classified as white than does the nation. And while the relative size of the white population declined between 1960 and 1980 for both Kentucky and the nation, the decline was significantly smaller in Kentucky. As a result, during this period, the relative size of the non-white population grew less in Kentucky (from 7.2 percent to 7.7 percent of the total population) than in the nation (from 11.4 percent to 16.9 percent).

Educational attainment of the resident population is not a reliable indicator of a state's educational system because persons educated in one state often reside in other states. Much of Kentucky's slower-than-average population growth probably is a result of out-migration. Nevertheless, the data show that Kentucky's resident population is below the national average in both high school graduates (12 years or more of schooling) and college graduates (16 years or more of schooling).

And while educational attainment improved in both Kentucky and the nation between 1960 and 1980, growth in the relative share of Kentuckians with high school and college degrees continues to lag that in the nation. During this period, the share of Kentuckians with high school degrees increased from 27.6 percent to 53.1 percent of the population 25 years or older, and the share of college graduates increased from 4.9 to 11.1 percent. However, Kentucky continued to lag the nation in percentage of high school graduates by 13.5 points in 1960 and 13.8 points in 1980. Similarly, the state lagged the nation in percentage of college graduates by 2.8 percentage points in 1960 and 5.1 points in 1980. Again, readers are reminded that these differences are influenced by migration among states.

Population Migration

Net migration, the relationship between the number of people moving in and out of a region, may be regarded as an "economic indicator" series in that abundant economic opportunities in a state are likely to cause increased in-migration or decreased out-migration, either of which is a favorable change to the state's net migration. If a state has been experiencing negative net migration, improvement would be shown by decreased negative net migration followed perhaps, by positive net migration.

When shown in a table as annual amounts over several decades, changes in net migration are important indicators of the overall economic health of a state. Some data adjustments are necessary, however, because net migration data often are influenced by irregular forces in the economy. These irregularities can be smoothed by the moving-average method. For example, net migration for years 1, 2, and 3 can be converted to an average, and the average amount can be used instead of the actual amount for year 2. Then, net migration for years 2, 3, and

TABLE 1-C

Average Net Migration of Population, Kentucky, 1955-1985

Year	Annual Net Migration, Calculated as a 3-Year Moving Average (Thousands of Persons)	Year	(Thousands of Persons)	Year	(Thousands of Persons)
1955	− 51	1966	− 16	1977	+ 24
1956	− 40	1967	− 9	1978	+ 13
1957	− 30	1968	− 8	1979	+ 7
1958	− 14	1969	− 9	1980	− 3
1959	− 8	1970	+ 8	1981	− 7
1960	− 13	1971	+ 19	1982	− 9
1961	− 16	1972	+ 24	1983	− 8
1962	− 23	1973	+ 17	1984	− 10
1963	− 15	1974	+ 23	1985	n/a
1964	− 18	1975	+ 31		
1965	− 18	1976	+ 30		

Source: The 3-year moving average of Annual Net Migration was calculated within the Kentucky Economic Information System (KEIS) from annual net migration data stored in the KEIS database (see note below). Calculation of a 3-year moving average for 1985 was not possible since 1986 data were not available when this table was prepared.

Annual population estimates are made by the Bureau of the Census, U.S. Department of Commerce and published in the P-25 *Current Population Series*. Data for 1960, 1970, and 1980 are April 1 estimates; data for all other years are July 1 estimates. Data on births and deaths originate from the Kentucky Cabinet for Human Resources; the July 1 estimates on births and deaths used to compute net migration are made by the Bureau of the Census.

Note: Annual net migration is the number of persons moving into Kentucky less the number of persons moving out of Kentucky; it represents that part of the difference between the population of one year and the next that is not accounted for by adding births and subtracting deaths. A negative amount indicates population loss. It should be borne in mind that the annual intercensal estimates of births and deaths are not revised, although the annual total population estimates are revised as a result of subsequent censuses and other information. Another difficulty with annual net migration data is the use of April 1 estimates for censal years and July 1 estimates for all other years.

In other words, estimates of annual net migration are subject to error. Because of this, the figures presented in this table represent a moving average of actual estimates. That is, the figure presented for any given year is an average of the estimates for that year and the preceding and following years. The resulting figures should be interpreted as indicators of the direction and general magnitude of net migration.

4 can be converted to an average, and that average amount can be used instead of the actual amount for year 3. The resulting data are a 3-year moving-average series of net migration values, a series that is less influenced by irregularities.

Table 1-C shows average net migration for Kentucky for each year between 1955 and 1984. Because 1985 is the last year for which data are available, the 3-year moving average for 1983, 1984, and 1985 gives an average amount for 1984. (One could of course "peek" at the actual 1985 amount, but this amount could be misleading because of irregular forces.)

Improvement in the Kentucky economy relative to the national economy is suggested by reduced amounts of negative net migration (net out-migration) generally from 1955 through 1969 (although with a reversal in the 1960-62 period) followed by increasing amounts of positive net migration (net in-migration) from 1970 generally to 1975 when positive net migration peaked. Thus, the period 1955 to 1976 is one of general improvement (relative to the national average) as shown by reduced out-migration and increased in-migration. Following the 1975 peak, however, the data suggest a decline in Kentucky's general economic performance relative to the national average. Not only did positive net migration get smaller after 1975, but negative net migration began in 1980 and continued generally through 1984.

An interesting question is whether the changes in Kentucky's overall economic performance suggested by the net migration data are confirmed by changes in per capita personal income. Table 1-D compares Kentucky data on average net migration with data on Kentucky's per capita personal income expressed as a percentage of the national average for the period 1969 through 1985. As shown by the net migration data, Kentucky's period of general improvement was 1969 through 1976 and its period of general worsening was 1977 through 1984. Similar periods of relative improvement and worsening can be seen in the per capita personal income series. Kentucky's per capita personal income increased as a percentage of the national average generally throughout the period 1969 through 1977, rising from 76.8 percent in 1969 to 82.0 percent in 1977, an increase of 5.2 percentage points. Following the 1977 peak, Kentucky's per capita personal income declined relative to the national average in the period 1978 through 1985, with the 1985 amount at 3.9 percentage points lower than the 1977 peak. Except for the differences in peak years, some differences in dates of irregular changes, and the use of a 3-year moving average in the net migration data, the two series tell the same story. As compared to the national average, the Kentucky economy improved from 1969 through 1975 or 1977 and declined thereafter, in both series.

TABLE 1-D

Comparison of Net Migration with Kentucky Per Capita Personal Income as a Percent of U.S. Per Capita Personal Income

Year	Kentucky Net Migration (Thousands of Persons, 3-Year Moving Average)	Per Capita Personal Income Kentucky as % of United States (Percent)
1969	− 9	76.8
1970	+ 8	77.6
1971	+ 19	77.8
1972	+ 24	78.5
1973	+ 17	78.9
1974	+ 23	80.7
1975	+ 31	80.3
1976	+ 30	81.1
1977	+ 24	82.0
1978	+ 13	81.1
1979	+ 7	81.3
1980	− 3	80.6
1981	− 7	80.4
1982	− 9	80.6
1983	− 8	78.3
1984	− 10	79.1
1985	n/a	78.1

Source: Same as Table 1-C and U.S. Department of Commerce, Bureau of Economic Analysis, through the Kentucky Economic Information System.

FIGURE 1-A

Years of Schooling, Percent of Persons 25 Years of Age or Over, Kentucky and the United States, 1960, 1970 and 1980

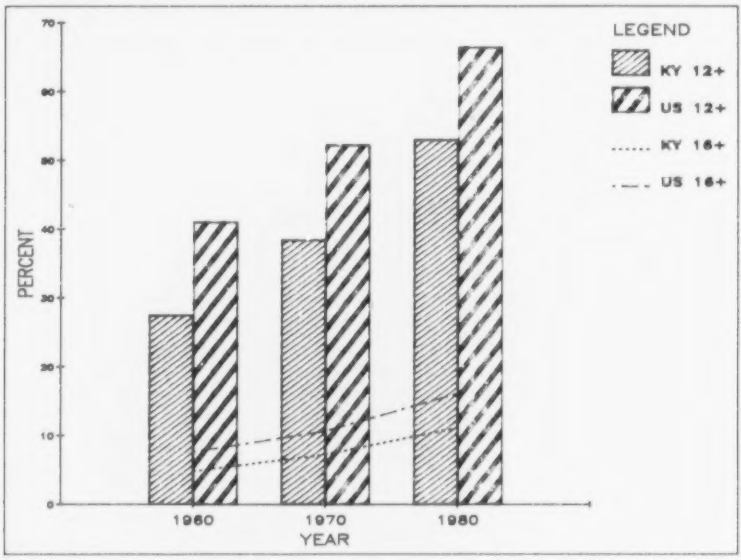
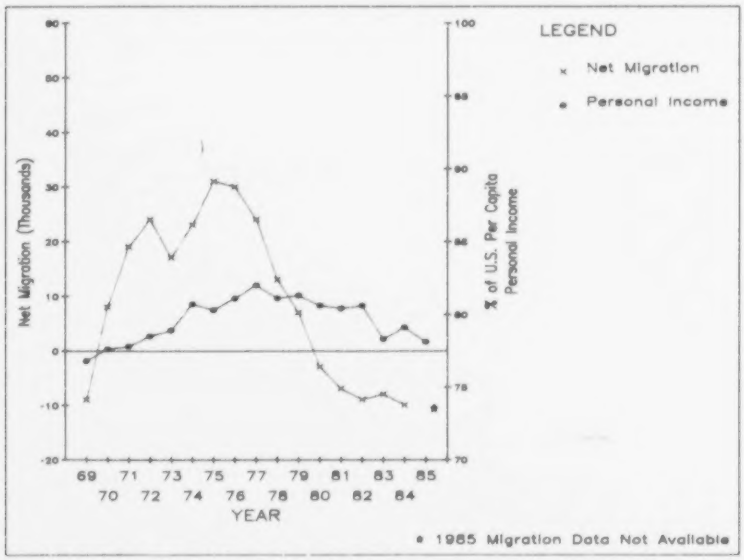


FIGURE 1-B

Comparison of Net Migration with Kentucky Per Capita Personal Income as a Percent of U.S. Per Capita Personal Income, 1969-1983



2. Labor Force Characteristics

The labor force characteristics examined in this section are: the *civilian labor force participation rate* (employed plus unemployed as a percentage of the noninstitutional civilian population age 16 and over); the *civilian unemployment rate* (unemployed as a percentage of unemployed plus civilian employed); and *average annual earnings* by eight major industrial groups.

To avoid misinterpretation, a brief clarification of definitions is presented. In Figure 2-A, the entire population (of the nation, or a state) is arranged according to groups that are relevant to labor force participation. Two groups are always omitted in computing the various labor force statistics; the institutional population; and young persons (below age 16). When concern is with only the *civilian* population, the armed forces are omitted. Because no unemployment is experienced by members of the armed forces, their inclusion in labor force statistics would increase the number of employed without increasing the number of unemployed and therefore would tend to understate unemployment rates. What remains after omitting these three groups is the *"civilian labor force population"* which includes all persons in the civilian population who might possibly seek employment.

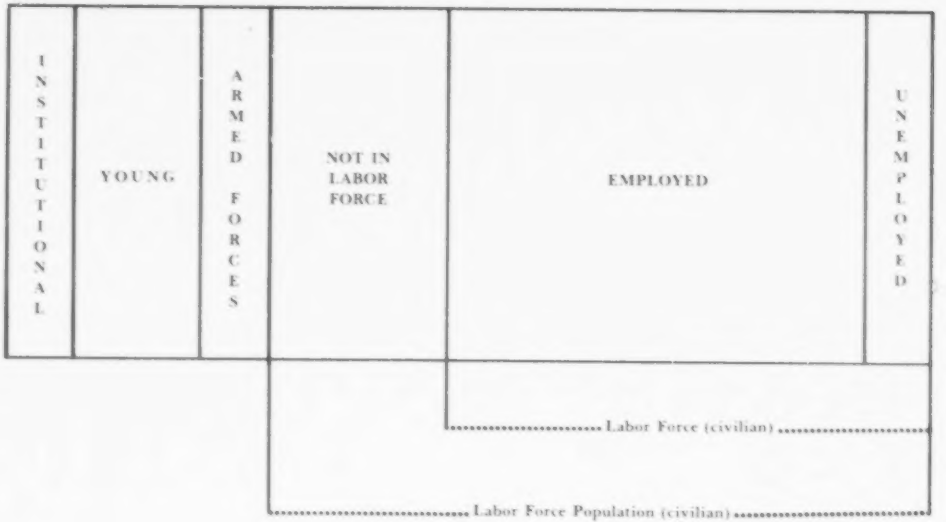
Included in the civilian labor force population are one group that is employed and two groups that are not. Confusion often arises concerning these two non-working groups. One non-working group is the *unemployed* and includes persons who are not working but nevertheless are actively seeking employment. The other non-workers are the *not-in-labor-force group*, who are neither employed nor seeking employment. A main component of the not-in-labor-force group is homemakers who do not have (or seek) other jobs. Also included are non-working students age 16 and over, retired persons, persons discouraged from looking for work, and the totally disabled.

Civilian Labor Force Participation Rate

Table 2-A presents annual civilian labor force participation rates for the period 1970 through 1985, for Kentucky and the nation. Of interest are whether the Kentucky rates generally are above or below the national rates and how the relationship has changed over the years. These comparisons are facilitated by expressing the Kentucky rates as percentages of the national rates, whereby a percentage below 100 indicates that the Kentucky rate is less than the national rate. For all of the 16 years shown, Kentucky's rates are slightly below the national rates, generally at about 98 percent of the national rate. But lower percentages are shown for 1970 through 1972 and also in 1985. The substantial relative decline in the Kentucky rate compared with the national rate in 1985 resulted from the Kentucky rate declining by 1.1 percentage points while the national rate increased

FIGURE 2-A

Components of Population and Labor Force Participation Definitions



$$\text{Civilan Unemployment Rate} = \frac{\text{Unemployed}}{\text{Labor Force}} \times 100$$

$$\text{Civilian Labor Force Participation Rate} = \frac{\text{Labor Force (civilian)}}{\text{Labor Force Population (civilian)}} \times 100$$

TABLE 2-A

Annual Rates of Civilian Labor Force Participation, Kentucky and United States, 1970-1985

Year	Kentucky	United States	Kentucky as % of United States
1970	56.8%	60.4%	94%
1971	56.7	60.2	94
1972	56.7	60.4	94
1973	59.8	60.8	98
1974	60.3	61.3	98
1975	58.9	61.2	96
1976	59.5	61.6	97
1977	60.9	62.2	98
1978	61.8	63.2	98
1979	63.0	63.7	99
1980	62.7	63.8	98
1981	62.3	63.9	98
1982	62.5	64.0	98
1983	62.4	64.0	98
1984	62.8	64.4	98
1985	61.7	64.8	95

Source: Kentucky rates are calculated within the Kentucky Economic Information System from data produced by the Kentucky Cabinet for Human Resources and the U.S. Department of Commerce, Bureau of the Census. National data are from the U.S. Department of Labor, Bureau of Labor Statistics.

Note: The Labor Force Participation Rate is the number of employed and unemployed persons as a percentage of the noninstitutional civilian population age 16 and over.

by 0.4 points. Kentucky's slightly below average rates of civilian labor force participation are consistent with the shortage of employment opportunities that was suggested by the analysis of population and net migration in Section 1.

Unemployment Rate

Unemployment rates, as explained above, do not concern the not-in-labor-force group but only persons in the labor force population who are either employed or seeking employment. Because of movements between the unemployed and the not-in-labor-force group (as when a long-term unemployed person becomes discouraged and no longer seeks employment), a declining unemployment rate does

not necessarily indicate improvement in the economy. Nevertheless, much public attention is given to the unemployment rate as computed and reported by the U.S. Department of Labor and similar state agencies.

Table 2-B compares Kentucky and the nation according to annual rates of civilian unemployment for the 25 year period 1961 through 1985. Of interest is whether the Kentucky rates are below or above the national rates and how the relationship has changed over the years. To simplify the comparisons, the national rates are subtracted from the Kentucky rates. A positive difference indicates a Kentucky rate above the national rates. Over the years, improvement of Kentucky's economic situation could be indicated by its unemployment rate decreasing relative to the national rate and this would be shown in the "difference" column as declining positive differences or increasing negative differences. Likewise, increasing positive differences or declining negative differences would indicate worsening of the Kentucky economy.

General improvement in the Kentucky economy in the period 1961 through 1977 is suggested by the unemployment rate differences in Table 2-B, but a reversal of this movement (that is, worsening) is suggested for the period 1978 through 1985. Kentucky's unemployment rate exceeded the national rate in the period 1961 through 1969, but the difference generally grew smaller, and after 1970 the Kentucky rate was below the national rate by increasing amounts. This improvement continued generally until 1977 when the Kentucky rate of 4.7 percent unemployed was 2.4 percentage points below the national rate of 7.1 percent. After 1977, however, the Kentucky rate began increasing relative to the national rate. In the period 1980 through 1985, the Kentucky unemployment rate exceeded the national rate, and in 1985 reached a level of 2.3 percentage points higher than the national rate. Thus, the 1985 Kentucky unemployment rate exceeded the national rate by the largest number of percentage points since the 4.5 point difference in 1961. Of special importance in these comparisons is the general similarity of periods of improvement and worsening as previously found in the comparison of net migration and population in Section 1. General improvement is shown until 1977 and general worsening thereafter.

Another point of interest concerning the unemployment rate analysis is whether Kentucky's recent higher-than-average unemployment rates are caused by changes in number employed, number unemployed, or number not in the labor force. As previously explained, the unemployment rate definition allows the unemployment rate to be smaller (be more favorable) if the long-term unemployed become discouraged and retreat into the not-in-labor-force group, or if homemakers do not seek gainful employment because they have good reason to believe that suitable jobs are not available. Changes of this nature can be hidden in the unemployment rate statistics. A method for more clearly identifying these changes is to convert the original data to index number series. When annual data for the main civilian population groups relevant to the civilian unemployment rate are converted to index number series, it is easy to determine whether a particular series has increased or decreased and also which series have changed relative to the others.

TABLE 2-B

Annual Rates of Total Civilian Unemployment, Kentucky and the United States, 1961-1985

Year	Kentucky	United States	Percentage Point Difference KY – U.S.
1961	11.2%	6.7%	+4.5
1962	8.1	5.5	+2.6
1963	7.2	5.6	+1.6
1964	7.0	5.2	+1.8
1965	5.5	4.5	+1.0
1966	4.7	3.8	+0.9
1967	4.8	3.8	+1.0
1968	4.7	3.6	+1.1
1969	4.2	3.5	+0.7
1970	4.4	5.0	−0.6
1971	5.1	5.9	−0.8
1972	6.0	5.6	+0.4
1973	3.7	4.9	−1.2
1974	4.5	5.6	−1.1
1975	7.3	8.5	−1.2
1976	5.6	7.7	−2.1
1977	4.7	7.1	−2.4
1978	5.3	6.1	−0.8
1979	5.5	5.8	−0.3
1980	8.0	7.1	+0.9
1981	8.4	7.6	+0.8
1982	10.6	9.7	+0.9
1983	11.6	9.6	+2.0
1984	9.3	7.5	+1.8
1985	9.5	7.2	+2.3

Source: Kentucky Cabinet for Human Resources, and the U.S. Department of Labor, Bureau of Labor Statistics, through the Kentucky Economic Information System.

Note: The Unemployment Rate is the number of unemployed persons as a percentage of the civilian labor force.

Civilian Labor Force Population Components

Table 2-C presents index number series (1980 = 100) for number of persons unemployed, number employed, and number not in the labor force, for the civilian population, for the period 1970 through 1985, with Kentucky and the nation compared. As previously shown in Table 2-B, Kentucky's unemployment rate, compared with the national rate, worsened after 1977. Also, the fact that the index numbers for 1980 are 100 in all cases, allows easy comparison between 1980 and 1985, and the changes between 1984 and 1985 are of current interest. Therefore, three comparison periods are suggested: from 1977 through 1985; from 1980 through 1985; and from 1984 through 1985.

Between 1977 and 1985, the index number series for number of employed increased by only 3.8 percentage points for Kentucky but by 15.2 points for the

TABLE 2-C

Changes in the Components of the Civilian Labor Force Population, Kentucky and the United States, 1970-1985
(Index Numbers: 1980 = 100)

	Employment		Unemployment		Not in Labor Force	
Year	Kentucky	United States	Kentucky	United States	Kentucky	United States
1970	76.7	79.2	40.6	53.6	94.5	88.2
1971	78.4	79.9	48.9	65.7	97.5	92.0
1972	79.3	82.7	57.9	63.9	99.8	94.2
1973	87.5	85.7	39.1	57.2	94.3	95.1
1974	89.3	87.4	48.9	67.5	95.2	95.9
1975	86.7	86.4	78.9	103.8	101.1	97.9
1976	91.5	89.4	62.4	97.0	102.1	98.9
1977	96.5	92.7	54.1	91.5	100.6	99.0
1978	99.0	96.7	63.2	81.2	100.0	98.3
1979	99.2	99.5	66.9	80.4	95.3	98.5
1980	100.0	100.0	100.0	100.0	100.0	100.0
1981	99.9	101.1	105.3	108.3	101.9	101.1
1982	98.5	100.2	134.6	139.8	102.2	102.1
1983	98.2	101.5	148.9	140.5	103.4	103.1
1984	101.7	105.7	120.3	111.8	102.8	103.3
1985	100.3	107.9	121.1	108.8	106.3	103.2

Source: Kentucky unemployment and employment data are from the Kentucky Cabinet for Human Resources; the not-in-labor-force data are computed by subtracting unemployment and employment from the civilian labor force population estimates made by the U.S. Department of Commerce, Bureau of the Census. National data are from the U.S. Department of Labor, Bureau of Labor Statistics.

nation. The unemployment index series increased by 67 points for Kentucky but by only 17.3 points for the nation. These two groups of changes show Kentucky's employment and unemployment situations to have worsened, relative to the nation. In addition, the weak job situation in Kentucky caused its not-in-labor-force index series to increase by 5.7 points while the nation's increase was only 4.2 points.

Comparing 1985 with 1980, the employment index increased by only 0.3 percentage points for Kentucky but 7.9 points for the nation; the unemployment index increased by 21.1 points for Kentucky but only 8.8 points for the nation; and the not-in-labor-force index increased by 6.3 points for Kentucky but only 3.2 points for the nation.

One-year changes between 1984 and 1985 show that the employment index decreased by 1.4 percentage points for Kentucky but increased by 2.2 points for the nation; the unemployment index increased by 0.8 points for Kentucky but declined by 3 points for the nation; and the not-in-labor-force index increased by 3.5 points for Kentucky but declined by 0.1 point for the nation. During these three periods, rates of unemployment as shown in Table 2-B changed as follows: 4.8 percentage point increase for Kentucky and 0.1 point increase for the nation, between 1977 and 1985; 1.5 point increase for Kentucky and 0.1 point increase for the nation, between 1980 and 1985; and 0.2 point increase for Kentucky but 0.3 point decline for the nation, between 1984 and 1985.

These various comparisons indicate that Kentucky's main problem relative to the nation since 1977 has been slow growth in employment opportunities. The number of persons employed in Kentucky in 1985 was only slightly larger than in 1978 and virtually the same as in 1980. The nation's employment, in contrast, increased in all years but 1982, and by 1985 was well above the 1977 and 1980 levels. Kentucky's slow growth in job opportunities, therefore, is indicated by worsening in four important statistical comparisons of Kentucky and the nation: low growth in number of persons employed; high growth in number of persons not working, both from unemployment and from those not in the labor force; and loss of population to other states (net out-migration shown in Table 1-C).

Average Earnings

The last labor force characteristic examined in this section—average annual earnings by industry groups—is especially useful for interpreting the importance of employment changes. Employment change in a high-wage industry group has a much larger effect on total income than does employment change in a low-wage industry group. For example, wages are high in the mining industry and low in the services and trade industries. Declines in the mining industry can be offset by increases in the services or trade industries, if only number of persons employed is examined. But if total income earned is examined, it might take a gain of two or three trade or service jobs to offset the loss of one mining job.

Table 2-D examines average annual earnings for 1985 for all nonagricultural wage and salary employees in Kentucky and the nation, arranged by eight industry groups. Two types of comparisons are made. First, the Kentucky average earnings amounts for all workers and for the eight industry groups are expressed as percentages of corresponding national amounts. This comparison shows the degree to which Kentucky earnings are below the national average, in total and by industry groups. Second, the amounts for the eight industry groups are expressed as percentages of the average for all workers, for Kentucky and the nation. This comparison shows the degrees to which annual average earnings differ among industry groups in Kentucky and in the nation.

TABLE 2-D
Average Annual Earnings of Nonagricultural Wage and Salary Employees
Kentucky and the United States, 1985

	Average Earnings			Industry Average as % of All-Worker Average	
Industry	Kentucky	United States	Kentucky as % of United States	Kentucky	United States
Mining	$29,024	$31,374	92.5%	174%	166%
Construction	17,510	21,346	82.0	105	113
Manufacturing	22,053	23,761	92.8	132	125
Transportation	23,724	26,304	90.2	142	139
Trade	11,780	14,158	83.2	71	75
Finance, Insurance and Real Estate	18,029	22,237	81.1	108	117
Services	12,600	16,012	78.7	75	85
Government	17,115	19,657	87.1	102	104
Total Nonagricultural	16,703	18,940	88.2	100	100

Source: U.S. Department of Commerce, Bureau of Economic Analysis, through the Kentucky Economic Information System.

Note: Average Annual Earnings of Wage and Salary Employees is total wage and salary disbursements divided by total number of wage and salary jobs. These data are workplace-based and include full and part-time jobs.

The first comparison in Table 2-D shows average annual earnings of Kentucky wage and salary employees, as percentages of their corresponding national averages. The Kentucky average for all workers is only 88.2 percent of the national average. Among the industry groups, Kentucky earnings are closest to the industry national average in manufacturing (92.8 percent), followed closely by mining (92.5 percent). Earnings in most of the other Kentucky industry groups are much farther below their national averages, at 78.7 percent in services, 81.1 percent in finance/insurance/real estate, and 83.2 percent in trade.

The second comparison in Table 2-D shows how average earnings in particular industry groups differ from the all-worker average, both in Kentucky and the nation. A peculiar feature of this second comparison is that only two of the eight industry groups have earnings below the all-worker average, for both Kentucky and the nation. In Kentucky, average earnings in the trade industry were only 71 percent of the all-worker average, and earnings in the services industry were 75 percent of the all-worker average. Nationally, earnings in these two groups are less below average than in Kentucky. These two groups are characterized by a large number of workers and below average earnings; this offsets the above-average earnings in the other industry groups.

In Kentucky, average earnings were 174 percent of the all-worker average in mining, 142 percent in transportation and public utilities, and 132 percent in manufacturing. Similar but less extreme differences are found in the national amounts for industry groups. It is interesting that earnings in the construction group, the finance/insurance/real estate group, and the services group are farther above the all-worker average in the nation than in Kentucky. On the other hand, mining and manufacturing average earnings exceed the all-worker averages more so in Kentucky than in the nation.

FIGURE 2-B

Percentage Point Difference between Kentucky and the United States' Annual Rates of Total Civilian Unemployment, 1961-1985

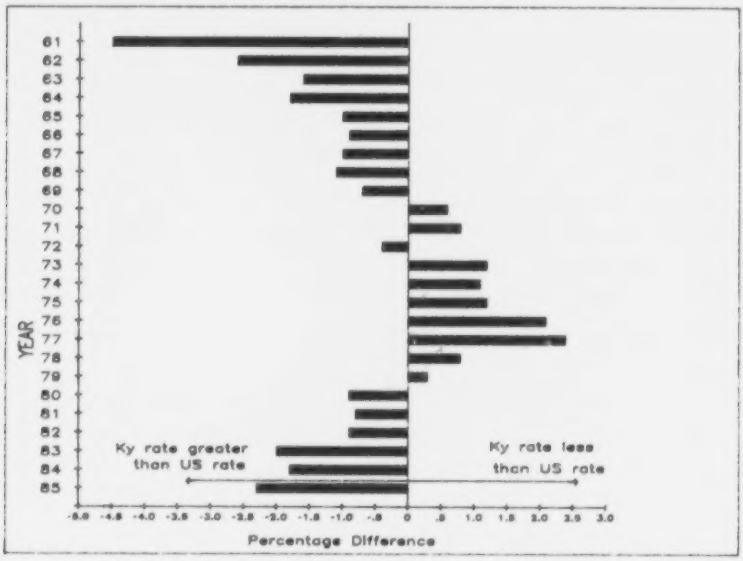
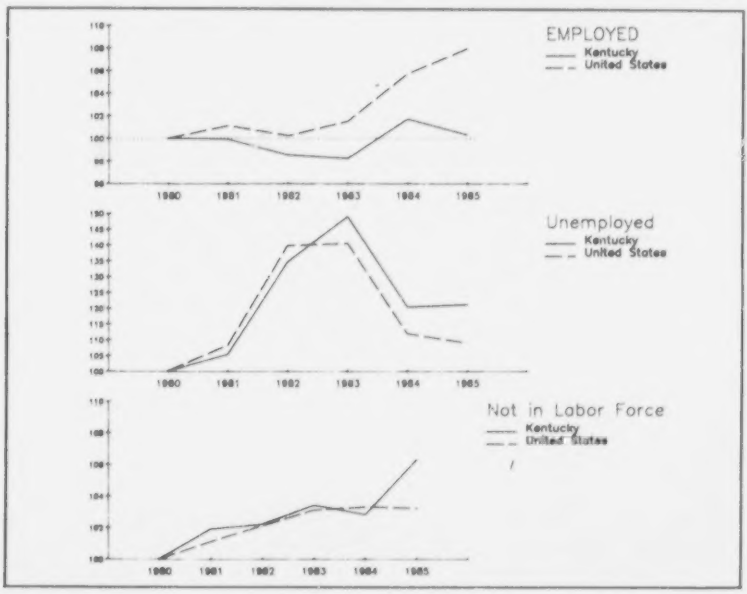


FIGURE 2-C

Changes in the Components of the Civilian Labor Force Population, Kentucky and the United States, 1980-1985 (Index Numbers: 1980 = 100)



3. Personal Income by Levels and Sources

Total personal income is the broadest statistical measure of total economic activity in a state that is available annually for both Kentucky and the group of 50 states. (Gross State Product, which is a state-level equivalent of Gross National Product, is not regularly computed for Kentucky and many other states.) The income of all residents in a state is summed to obtain total personal income. Because states differ greatly in size, interstate comparisons are most relevant when made in terms of per capita personal income. This measure is obtained by dividing a state's total personal income by the resident population to give amount per person on the average (that is, amount per capita). Differences and changes in per capita personal income among states and over the years reflect differences and changes in total economic activity and therefore are useful for interstate comparisons. Also of interest are sources of personal income and how these differ and change among states and over the years. Major sources are labor and proprietors' income (both farm and nonfarm), investment income (dividends, interest, and rent), and transfer payments (mainly from governmental income support programs).

Examined in this section are personal income data for Kentucky, the nation, and the Southeast, for each year in the period 1970 through 1985 and also for selected previous years. Income is analyzed in terms of per capita amounts, parts as percentages of totals, and index numbers based on 1980 equal to 100. Also noted are changes resulting from use of revised data in this year's report.

Per Capita Personal Income

Table 3-A compares Kentucky with the nation and the Southeast according to per capita personal income, with amounts expressed as percentages of the national per capita amounts. Years shown are 1970 through 1985. Because Kentucky and the Southeast were affected by the revision of Bureau of Economic Analysis (BEA) personal income data, both the "old" and "new" per capita amounts are presented. In previous annual economic reports, Kentucky's per capita personal income was shown to rise relative to the national average, generally from 1960 through 1977, but to decline relative to the national average after the 1977 peak. The Southeast showed similar gains on the national average but generally out-performed Kentucky, especially in not suffering relative decline after the late 1970s. These relationships can be seen in the "old" data in Table 3-A.

The revised or "new" data give a picture that, while generally similar, shows Kentucky not to have improved as much during the 1960 through 1977 period, and to have suffered greater relative decline since the 1977 peak. Kentucky, in the revised data, was 0.9 percentage points lower than in the former data for 1970, 1.0 point lower for 1977, and 1.4 points lower for 1984. That is, Kentucky's gain on the national average from 1960 through 1977 was less than previously

TABLE 3-A

Per Capita Personal Income, Kentucky and the Southeast Region Relative to the United States, Revised and Non-Revised Data, 1970-1985 (Amounts as Percentages of the United States Average)

	Kentucky		Southeast	
Year	Previous Data	Revised Data	Previous Data	Revised Data
1970	78.5%	77.6%	82.0%	81.5%
1971	78.8	77.8	83.1	82.4
1972	79.4	78.5	84.3	83.6
1973	79.8	78.9	84.9	84.2
1974	82.9	80.7	85.5	84.7
1975	82.0	80.3	84.9	84.2
1976	82.7	81.1	85.3	84.7
1977	83.0	82.0	85.3	84.6
1978	81.7	81.1	85.7	85.1
1979	82.0	81.3	85.5	85.1
1980	80.5	80.6	85.8	85.6
1981	81.2	80.8	86.3	86.0
1982	81.7	80.6	86.9	86.2
1983	79.7	78.3	87.5	86.7
1984	80.5	79.1	87.4	86.7
1985	—	78.1	—	86.5

Source: U.S. Department of Commerce, Bureau of Economic Analysis, through the Kentucky Economic Information System.

Note: States of the Southeast Region are: Alabama, Arkansas, Florida, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, South Carolina, Tennessee, Virginia, and West Virginia.

reported. The peak year was 1977 in both data series, but the peak value was reduced by the revision, and the decline from 1977 through 1984 was steeper and at a lower level in the revised data. For the Southeast, the data revision mainly had the effect of reducing the annual amounts by about one-half of a percentage point over the entire period 1970 through 1984; the general trend was not changed.

Another unfortunate item of information in Table 3-A is that Kentucky's relative position declined from 1984 to 1985, with per capita personal income as a percentage of the national average declining by one percentage point in the revised data series. Thus, Kentucky's per capita personal income level in 1985, relative to the national average, had fallen 3.9 percentage points below its 1977 peak, and Kentucky was in almost the same relative position as in 1970 to 1971. The Southeast, in contrast, improved its relative position since 1977 by 1.9 points.

Per Capita Personal Income Components

The economic differences and changes shown in per capita personal income data can also be examined by creating the index numbers from per capita personal income and its two components—population and total personal income. These three index number series (1980 = 100) are presented in Table 3-B for Kentucky, the Southeast, and the United States, for 1970 through 1985. Population changes are gradual over the years, since they are not exaggerated by inflation as are the two other series derived from dollar amounts. Comparing 1977, Kentucky's peak year of relative economic progress, with 1985, population increased only 4.2 percentage points in Kentucky compared with 11.8 points in the Southeast, and 8.4 points in the nation. Total personal income increases were larger because of inflation, but Kentucky's increase of 64.8 points between 1977 and 1985 was less than the 82 points for the Southeast and the 75.9 points for the nation. Because of differences in population growth, Kentucky's income growth appears less sluggish when put in terms of the per capita values. Kentucky's per capita personal income increased between 1977 and 1985 by 60.8 percentage points, compared with 68.6 points for the Southeast and 66.3 points for the nation. Between 1984 and 1985, Kentucky's per capita personal income increased only 5.6 percentage points, compared with 7.3 points for the Southeast and 7.6 points for the nation.

Real Per Capita Personal Income

Another relevant adjustment in the per capita personal income data is to remove the exaggerating effects of inflation. Table 3-C presents inflation-deflated values of per capita personal income for Kentucky, the Southeast, and the nation as index numbers (1980 = 100) for the period 1970 through 1985. The patterns of relationship are the same as shown in the inflation-exaggerated data, but the degrees of growth over the years are much less. Adjusting for inflation was accomplished by deflating the original income values from current dollars to dollars of constant purchasing power relative to 1982. In real purchasing power, therefore, Kentucky's per capita personal income increased between 1977 and 1985 from 97.2 to 104.9 in index numbers, an increase of 7.9 percent from 1977. During this period, real per capita personal income in the Southeast increased by 15.8 percent which was twice Kentucky's percentage rate.

Sources of Total Personal Income

Table 3-D examines total personal income according to sources, for Kentucky and the United States for the period 1970 through 1985. Of interest are the importance of particular sources and how they differ between Kentucky and the national average and how these relationships have changed over the years. Also of interest is how the data revision affected the source-of-income data. Readers interested in exact amounts are referred to last year's report. As a general observation, the data revision caused Kentucky to appear more similar to the nation in

TABLE 3-B

Growth in Population, Total Personal Income, and Per Capita Personal Income, Kentucky, the Southeast Region, and the United States, 1970-1985
(Index Numbers: 1980 = 100)

	Population			Personal Income					
				Total			Per Capita		
Year	Kentucky	Southeast	United States	Kentucky	Southeast	United States	Kentucky	Southeast	United States
1970	88.2	83.1	89.7	34.7	32.4	36.7	39.4	38.9	40.9
1971	90.0	85.1	91.0	37.7	35.5	39.5	41.8	41.8	43.4
1972	91.0	87.0	92.1	41.7	40.0	43.3	45.9	46.0	47.1
1973	92.0	88.8	93.0	47.1	45.7	48.6	51.2	51.5	52.3
1974	93.2	90.7	93.9	53.2	51.1	53.5	57.0	56.4	57.0
1975	94.7	92.2	94.8	57.7	55.6	58.1	61.0	60.3	61.2
1976	96.3	93.6	95.7	65.1	62.2	64.2	67.5	66.4	67.1
1977	97.5	95.1	96.7	73.0	69.2	71.1	74.8	72.8	73.6
1978	98.5	96.6	97.7	81.4	78.9	80.2	82.6	81.6	82.1
1979	99.4	98.3	98.8	91.4	89.0	90.0	91.9	90.6	91.1
1980	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
1981	100.3	101.5	101.0	111.0	112.7	111.6	110.7	111.0	110.4
1982	100.8	102.8	102.1	116.7	119.8	118.2	115.8	116.6	115.7
1983	101.3	104.1	103.1	120.2	128.7	125.8	118.7	123.7	122.0
1984	101.5	105.5	104.1	131.9	141.5	137.7	130.0	134.1	132.3
1985	101.7	106.9	105.1	137.8	151.2	147.0	135.6	141.4	139.9

Source and Note: Same as Table 3-A.

TABLE 3-C

Growth in Per Capita Personal Income in Dollars of Constant Purchasing Power Kentucky, the Southeast Region, and the United States, 1970-1985 (Index Numbers: 1980 = 100)

Year	Kentucky	Southeast	United States
1970	79.5	78.6	82.5
1971	80.7	80.6	83.6
1972	85.0	85.3	87.3
1973	89.4	89.9	91.3
1974	90.1	89.1	90.0
1975	89.2	88.2	89.6
1976	93.5	91.9	92.8
1977	97.2	94.5	95.5
1978	99.9	98.7	99.3
1979	101.8	100.3	100.9
1980	100.0	100.0	100.0
1981	101.3	101.6	101.1
1982	100.3	101.0	100.2
1983	98.7	102.9	101.5
1984	104.1	107.4	106.0
1985	104.9	109.4	108.3

Source and Note: Same as Table 3-A.

three of the categories (farm labor income, nonfarm labor income, and investment income) but more different in transfer payments.

Kentucky obtains a larger percentage than does the United States of total personal income from the farm sector. While this is still true in the revised data, the difference is smaller. Kentucky's lower-than-national percentage of income from nonfarm laborers and proprietors is retained, but the difference is lessened by the revision. Similarly for investment income, Kentucky still has a less-than-national percentage of personal income from investments, but the difference is lessened by the revision. On the other hand, the revised data show Kentucky not only to continue to be above the national average in percent of personal income from transfer payments but the difference is increased by the data revision. This latter change is unfavorable in the sense that a high percentage of transfer payment income suggests a need for such dependency, caused by low taxable values to support governmental expenditure programs and a large percentage of low income, dependent families. Other than for transfer payments, the data revisions show Kentucky to be less different from the nation in sources of personal income; this can possibly be interpreted as a favorable development.

TABLE 3-D

Relative Importance of Sources of Personal Income, Kentucky and the United States, 1970-1985

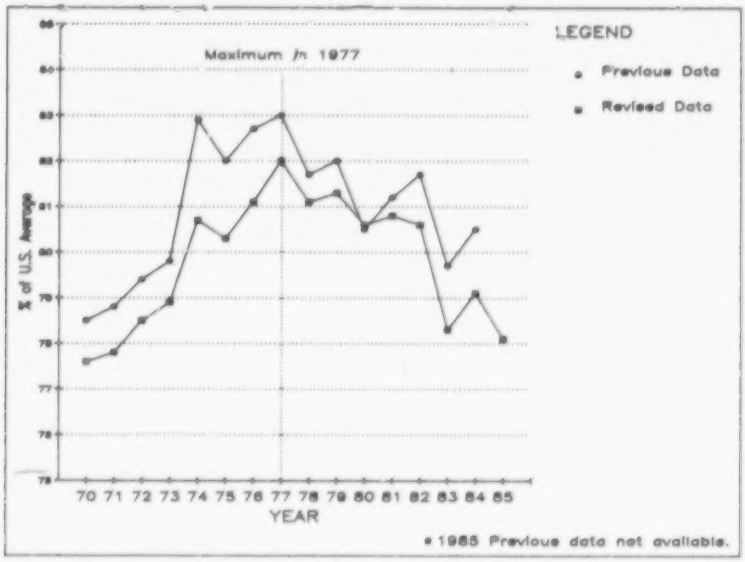
	Sources as Percentages of Total Personal Income							
	Labor and Proprietors' Income							
	Farm		Nonfarm		Transfer Payments		Investment Income	
Year	Kentucky	United States	Kentucky	United States	Kentucky	United States	Kentucky	United States
1970	4.2%	2.2%	75.0%	77.4%	11.8%	10.4%	10.2%	13.3%
1971	4.1	2.2	75.0	76.8	12.8	11.4	10.1	13.0
1972	4.5	2.4	75.1	77.0	12.9	11.6	9.7	12.6
1973	4.6	3.4	75.1	76.1	13.6	11.8	9.7	12.6
1974	4.7	2.6	74.2	75.6	14.4	12.7	10.1	13.0
1975	3.2	2.3	73.6	74.2	16.5	14.8	10.1	12.6
1976	3.3	1.9	74.1	75.0	16.1	14.6	10.0	12.4
1977	3.7	1.7	74.4	75.4	15.3	14.1	10.1	12.6
1978	3.0	1.8	75.7	75.5	14.7	13.5	10.5	13.0
1979	3.3	1.8	74.7	75.1	15.1	13.5	10.9	13.6
1980	2.7	1.2	72.0	73.5	16.7	14.4	12.3	14.7
1981	3.6	1.4	69.3	71.7	16.9	14.7	13.9	16.3
1982	2.9	1.2	67.9	70.8	17.6	15.4	15.0	16.8
1983	1.2	0.8	68.6	71.0	18.4	15.6	15.1	16.8
1984	3.0	1.2	68.1	71.3	17.3	14.7	15.0	17.1
1985	2.3	1.1	68.7	71.8	17.6	14.7	15.1	16.9

Source: U.S. Department of Commerce, Bureau of Economic Analysis; through the Kentucky Economic Information System.

Note: Investment Income includes personal interest income, dividends, and rental income. The above parts may not total 100 percent in some years, because the residence adjustment is not shown. See the glossary for a full explanation of the composition of Total Personal Income.

FIGURE 3-A

Kentucky Per Capita Personal Income as a Percentage of the United States Average, Revised and Non-Revised Data, 1970-1985


Maximum in 1977
LEGEND
Previous Data
Revised Data
% of U.S. Average
70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85
YEAR
* 1985 Previous data not available.

4. Wage and Salary Employment and Income in Eight Industry Groups

This section on wage and salary employment and income in the major industry groups is especially important because it offers additional dimensions to Kentucky's weakened economic situation as examined in previous sections. As shown, Kentucky compares unfavorably with the national averages in many important economic measures: (a) population growth is slow; (b) population continues to migrate out of the state; (c) the percentage of dependent population is high; (d) percentages of non-workers are high because labor force participation rates are low and unemployment rates are high; (e) average earnings of workers are low; (f) per capita personal income is low and is growing slowly; (g) dependence on income from governmental income support programs is high; (h) income from investments is low; and (i) the depressed construction, coal, and agricultural industries are important in Kentucky. (The coal, agriculture, and construction industries are specifically examined in later sections.)

In this section, employment and income performance are examined for nonagricultural wage and salary workers. Their total earnings constitute about 55 to 60 percent of total personal income in Kentucky. Data are available to examine details of wage and salary employment and income not only for the eight industry groups (Section 4), but also for the many subgroups in each industry group (Sections 8 and 9 of Part II). An attempt is made in these sections to distinguish between goods-producing and services-producing industries.

The outline for Section 4 is first to examine the relative importance of the eight industry groups in both wage and salary income and employment, with each group's values expressed as percentages of total wage and salary employment or income. Comparison is made between Kentucky and the nation for selected years. Second, changes over the period 1970 through 1985 are examined for the same groups, according to data converted to index numbers (1980 = 100), using only the employment data. (Analysis of employment by subgroups within these industry groups is in Part II of the report).

A reasonable question is why both wage and salary employment and income are not used in the index number analysis, since both types of data are available. The two sets of data are complementary in that they give different pictures of economic performance. For example, a person working five hours per week at $3.35 per hour is recorded as one worker in the employment data, and a person working 40 hours per week at $50 per hour also is recorded as one worker. Likewise, two full-time workers are counted the same in employment data, even if their annual earnings are different. These considerations favor use of both employment and income data in the detailed analysis. Only the employment data are analyzed in detail for a number of reasons: brevity; personal income data are examined in earlier sections of this report; and employment and unemployment statistics have social and political importance.

Employment and Income in Eight Industry Groups

Table 4-A compares Kentucky and the United States in terms of employment and income for nonagricultural wage and salary workers, by eight industry groups, for 1970, 1980, 1984 and 1985. Amounts are expressed as percentages of totals. The description based on Table 4-A is deliberately brief, because many comparisons using the same data are shown in later tables based on data converted to index series and concerning only the employment data.

Based on the employment data in Table 4-A, manufacturing, trade (wholesale and retail), and services are the most important industry groups in Kentucky. Their relative positions changed between 1970 and 1985, with manufacturing declining in relative importance by 5.9 percentage points, while trade increased by 3.8 points and services increased by 3.1 points. By 1985, 23.8 percent of total employment in Kentucky was in trade, 20.4 percent in services, and 20.2 percent in manufacturing, for a total of 64.4 percent. Their combined importance was 63.4 percent in 1970. Similar changes occurred nationally, with manufacturing declining in relative importance between 1970 and 1985 by 7.0 percentage points, while trade increased by 2.6 points and services increased by 5.1 points.

Among the other industry groups, the changes between 1970 and 1985 have been smaller, relative to the large changes in the manufacturing and services groups. Kentucky mining employment has fluctuated from 2.9 percent of the total in 1970, to 4.3 percent in 1980, and to 3.4 percent in 1985. Also shown by the employment data is that in 1985, Kentucky differed more from the United States in employment distribution among the eight industry groups than in 1970. The sum of percentage point differences between Kentucky and the United States in the eight industry groups in 1970 (signs ignored) was 6.5 points while this sum had increased to 10 points in 1985.

The income data in Table 4-A show essentially the same patterns and changes as do the employment data, except that wage-rate and hours-of-work differences exaggerate the differences among industry groups. Industry groups with average annual earnings well above the state or national average were identified in Table 2-D as the mining, transportation and public utilities, and manufacturing industries. The well below-average groups were identified as trade and services. It would be expected, therefore, that the high-earnings industries would account for larger percentages of totals in the income data than in the employment data in Table 4-A, while the opposite would be expected for the low-earnings industries.

In 1985, Kentucky mining accounted for 6.0 percent of total wage and salary income but for only 3.4 percent of total employment. Kentucky manufacturing accounted for 26.6 percent of wage and salary income but only 20.2 percent of employment, and Kentucky transportation and public utilities accounted for 7.6 percent of total income but only 5.3 percent of employment. In the two low-earnings industry groups, Kentucky's trade group accounted for 23.8 percent of total employment but only 16.8 percent of income; and the services group accounted for 20.4 percent of total employment but only 15.4 percent of income.

TABLE 4-A

Nonagricultural Wage and Salary Income and Employment: Relative Importance of Eight Industry Groups, Kentucky and the United States, Selected Years, 1970-1985
(Industry Amounts as Percent of Total Nonagricultural Wage and Salary Amounts)[a]

	1970		1980		1984		1985	
Industry Group	**Kentucky**	**United States**	**Kentucky**	**United States**	**Kentucky**	**United States**	**Kentucky**	**United States**
Income Data								
Mining	4.1%	1.1%	7.5%	1.8%	6.4%	1.6%	6.0%	1.5%
Construction	7.2	6.4	6.0	5.9	4.6	5.3	4.6	5.4
Manufacturing	30.4	30.1	27.8	26.6	27.2	24.6	26.6	24.0
Durable	17.3	18.6	16.6	17.1	16.1	15.6	15.7	15.3
Nondurable	13.0	11.5	11.2	9.5	11.1	9.0	10.9	8.7
Transportation[b]	8.2	7.7	8.0	7.8	7.6	7.4	7.6	7.2
Trade	16.4	17.2	16.1	17.4	16.5	17.4	16.8	17.4
Finance[c]	3.8	5.3	4.3	6.0	4.8	6.9	5.0	7.2
Services	11.5	13.7	13.0	16.9	15.1	19.5	15.4	19.9
Government[d]	18.5	18.2	17.0	17.3	17.4	16.9	17.5	16.9
Employment Data								
Mining	2.9%	0.8%	4.3%	1.1%	3.7%	1.0%	3.4%	0.9%
Construction	5.4	4.8	4.[illegible]	4.8	4.2	4.6	4.4	4.7
Manufacturing	26.1	26.1	22.5	21.7	20.9	19.8	20.2	19.1
Durable	14.1	15.1	12.6	13.0	11.6	11.7	11.0	11.4
Nondurable	12.0	11.0	9.9	8.7	9.3	8.0	9.1	7.7
Transportation[b]	6.2	6.1	5.6	5.5	5.3	5.3	5.3	5.2
Trade	20.0	20.7	21.6	22.1	23.2	23.0	23.8	23.3
Finance[c]	3.7	5.0	4.4	5.7	4.6	6.0	4.6	6.1
Services	17.3	18.5	18.5	21.1	20.2	23.2	20.4	23.6
Government[d]	18.1	17.6	17.9	17.4	17.1	16.4	17.1	16.3

Source: U.S. Department of Commerce, Bureau of Economic Analysis; Kentucky data through the Kentucky Economic Information System.

Notes

[a]Amounts do not sum to 100 percent because of rounding and also because data in the category Agricultural Services, Fisheries, Forestries and Other, a small nonagricultural group, is not included.
[b]The category Transportation is a composite of the Transportation, Communications and Public Utilities industries.
[c]The category Finance is a composite of the Finance, Insurance and Real Estate industries.
[d]Government excludes military personnel.

Taking into consideration average earnings in an industry group helps reconcile the differences between the income and employment data shown in Table 4-A. More precisely, Kentucky's 1985 manufacturing employment was 20.2 percent of the total (Table 4-A). When multiplied by the 132 percent of average for annual earnings (Table 2-D), the result is 26.7 percent (1.32 x 20.2 = 26.7). This value differs only slightly from the 26.6 percent value shown in Table 4-A as the 1985 Kentucky manufacturing percentage of total wage and salary income. Similar differences are shown in the national data, and similar computations could be made for the other industry groups.

Growth in Employment

As previously explained, the analysis of changes over the years among industry groups is presented in terms of index numbers using only the employment data. Several versions of these employment-change comparisons are presented. The index number series for employment by eight industry groups are first presented in Table 4-B. The same index number series also are presented in four additional tables, with the industry groups arranged in a manner to highlight other relevant dimensions: goods-producing versus services-producing (Table 4-C); large versus small size in Kentucky (Table 4-D); fast versus slow growth in Kentucky (Table 4-E); and high versus low earnings averages in Kentucky (Table 4-F). The same index number series are used in all of the five tables (Tables 4-B to 4-F); only the arrangement of industry groups is changed to emphasize these other relevant characteristics and relationships.

Table 4-B compares Kentucky and the United States according to nonagricultural wage and salary employment, in total and by eight industry groups. The comparison is on an annual basis for the period 1970 through 1985 and is in terms of index numbers (1980 = 100). Of interest within the 16-year period is the previously reported tendency for Kentucky's economic performance to have improved at a greater-than-national rate up to about 1977 but to worsen, relatively, since that year. This peak cannot be identified in the Kentucky employment index series alone because the national series also increased. However, greater-than-national increases in the Kentucky series can be identified by expressing the Kentucky index values as percentages of the corresponding national index values. This relative index is noted in Table 4-B as Ky Total/US Total. Relative Kentucky improvement is indicated if this index series grows larger. For 1970, dividing the Kentucky total employment index value (78.7) by the national value (79.4) gives a relative index value of 99.1. Kentucky's relative index value generally increased after 1970, peaked at 104.1 in 1977, generally declined thereafter, and was 96.0 in 1985.

By this method, 1977 is again identified as the last year of Kentucky's period of improvement, as compared to the nation, with relative decline thereafter although

TABLE 4-B

Nonagricultural Wage and Salary Employment Growth, Eight Industry Groups, Kentucky and the United States, 1970-1985
(Index Numbers: 1980 = 100)

Industry Group	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985
Kentucky																
Mining	53.8	57.3	59.2	59.9	73.9	88.1	89.1	97.4	99.8	103.0	100.0	103.1	100.2	80.4	86.8	83.2
Construction	88.3	91.5	95.3	97.3	92.7	86.3	93.3	100.7	117.3	119.2	100.0	91.3	86.5	80.7	87.0	93.2
Manufacturing	91.4	91.0	96.0	103.5	105.2	93.3	98.9	103.5	105.8	107.3	100.0	98.6	89.2	87.8	93.3	92.8
Transportation	87.9	88.5	89.2	92.3	93.0	89.8	90.3	95.4	99.7	102.3	100.0	99.0	95.2	91.9	95.3	98.3
Trade	72.8	75.2	75.6	80.2	82.6	85.7	90.1	94.1	100.9	103.0	100.0	99.7	99.8	101.8	108.1	113.9
Finance	66.4	68.5	70.1	73.9	78.6	79.0	82.5	88.0	92.8	97.5	100.0	100.7	99.4	102.5	106.3	109.7
Services	73.6	75.7	78.6	83.0	84.7	86.7	89.3	92.6	96.9	99.7	100.0	101.8	102.3	105.9	109.6	114.1
Government	79.4	80.6	81.7	83.9	87.7	91.0	92.1	92.5	95.6	98.7	100.0	97.2	95.0	94.6	95.6	98.5
Total	78.7	80.1	82.5	86.8	89.4	88.5	92.0	95.8	100.6	103.1	100.0	99.2	96.2	95.8	100.2	103.3
United States																
Mining	60.3	59.1	60.0	61.4	67.1	72.3	75.1	79.4	84.7	91.6	100.0	111.2	108.5	91.7	93.4	88.9
Construction	80.9	82.1	86.3	92.7	91.4	82.3	83.5	89.7	99.3	105.0	100.0	96.4	89.6	90.9	101.2	107.5
Manufacturing	95.2	91.1	93.4	98.6	98.5	90.0	93.4	97.0	101.2	103.7	100.0	99.4	92.7	90.8	95.4	94.7
Transportation	87.6	86.9	87.8	90.8	91.9	88.7	89.0	91.6	95.9	100.0	100.0	100.7	99.0	97.3	100.5	102.2
Trade	74.3	75.7	78.0	82.0	83.8	84.0	87.6	91.4	96.7	99.8	100.0	101.3	100.9	102.9	109.3	113.6
Finance	70.3	71.9	74.6	78.8	81.2	80.8	83.1	86.8	91.8	96.7	100.0	102.7	103.9	106.7	111.0	115.6
Services	69.3	70.8	74.2	77.9	79.7	81.6	84.6	88.3	93.4	97.1	100.0	103.4	105.6	109.3	115.3	120.1
Government	80.0	82.3	84.7	87.0	89.8	92.6	93.3	94.8	97.2	98.6	100.0	98.6	97.5	97.8	98.9	100.8
Total	79.4	79.6	82.2	86.1	87.6	86.1	88.7	92.0	96.7	99.8	100.0	100.8	99.1	100.0	104.8	107.6
KY Total/US Total	99.1	100.7	100.4	100.9	102.1	102.8	103.7	104.1	104.0	103.2	100.0	98.4	97.0	95.8	95.6	96.0

Source: Same as Table 4-A.

1985 showed slight improvement. Kentucky's total employment growth between 1970 and 1977 was 17.1 percentage points, compared with only 12.6 points for the nation. But from 1977 through 1985, Kentucky's total employment growth was only 7.5 percentage points, compared with the national growth of 15.6 points.

If only the Kentucky index series are observed, the peaks of employment generally occurred in 1979, both in total and for industry groups. For construction employment, both 1978 and 1979 were unusually high years for Kentucky, with a strong decline between 1979 and 1985 of 26 percentage points. In contrast, the national employment index for construction peaked in 1979, but by 1985 had risen again to 2.5 points above its 1979 value. For the national employment data, the pattern of peaks in the late 1970s and declines thereafter was much less prominent than in the Kentucky data, and in some industries, in particular the finance and services industry groups, there was virtually no decline.

Between 1970 and 1985, Kentucky's total employment growth was 24.6 percentage points, compared with the national growth of 28.2 points. Among industries, Kentucky's growth over the period was large in mining (29.4 points), trade (41.1 points), finance (43.3 points), and services (40.5 points). These groups also had high growth nationally, with increases of 28.6 percentage points in mining, 39.3 points in trade, 45.3 in finance, and 50.8 in services. Manufacturing employment in Kentucky grew by only 1.4 percentage points, and actually declined nationally by 0.5 points. The transportation industry increased employment by 14.6 points nationally but only 10.4 points in Kentucky. Government employment changed almost the same in Kentucky as in the nation (19.1 and 20.8 points, respectively). In construction, Kentucky's employment increase was only 4.9 points while national construction employment increased by 26.6 points.

In summary, the picture in Table 4-B is that Kentucky, between 1970 and 1985, had slower-than-national employment growth, both in total and in all of the industry groups except mining, manufacturing, and trade. Within this period, Kentucky's employment generally improved, relative to the national data, but peaked in 1977 and declined thereafter, although a slight increase occurred in 1985. All of the 1985 employment index values are lower for Kentucky than for the nation, except for trade where Kentucky's index value is 0.3 percentage points higher. Finally, because of data revisions, Kentucky's general increase between 1970 and 1977 was less than reported in previous editions of the annual economic report. According to the 1985 report, total Kentucky employment increased 26 percent between 1970 and 1977. But the revised data in this year's report show only a 22 percent increase ($95.8 \div 78.7 = 1.22$). The national increase was unchanged at 16 percent.

Tables 4-C to 4-F use the same index series as does Table 4-B, but the industry groups are arranged differently to highlight other relevant characteristics. Having analyzed Kentucky's wage and salary employment experience in Table 4-B, the purpose of the four additional tables using the same index series is to emphasize how the differences in employment growth among industry groups influence Ken-

tucky's growth in per capita personal income. For example, the same rates of growth can have different effects on Kentucky's per capita personal income, depending upon whether an industry group is large or small, or has high or low average earnings. Also of interest are different rates of growth between the goods-producing and services-producing industry groups.

Goods-Producing vs. Services-Producing Industries. Table 4-C concerns the eight industry groups arranged according to whether they are goods-producing or services-producing. Readers are reminded that employment data by *industry* groups cannot give a precise picture of the differences between goods and services production because employment data for most industry groups include both goods-producing and services-producing *workers*. For example, a worker does not have to dig coal to be counted as a worker in the coal industry. Services-producing workers such as salesmen and typists, if employed by a coal mining company, are counted as employed in the coal industry. Likewise, a carpenter employed by a retail store would be counted as employed in the retail trade industry. On the other hand, workers in the transportation, trade, finance, services, and government industry groups are most likely to be services producers, while goods production is the main activity of workers in the mining, construction, and manufacturing industry groups. These two groups of five and three industries respectively, are used as the services-producing and goods-producing groups in further analysis, partly because that grouping is sensible, but also because data are not adequate for a more precise grouping. Note also that the groupings according to size, rates of growth, and average earnings levels are according to the 1985 Kentucky data, and the national data are grouped in the same (Kentucky) order to allow comparison.

Look first in Table 4-C at the Kentucky totals for each group. Between 1980 and 1985, the total of the goods-producing industries declined by 8.4 percentage points while the services-producing group increased by 11.7 points. These differences between Kentucky and the nation mainly reflect differences in overall employment experiences, in which Kentucky's performance has been more unfavorable than the nation's, especially since the late 1970s. Looking more broadly at the entire 16-year period, Kentucky's total goods-producing index values increased by only 5.8 percentage points while the total services-producing index increased by 32.7 points. For the nation, the goods-producing total increased by only 5.3 points (slightly smaller growth than Kentucky's), but the services-producing total increased by 36.8 points (4.1 points more than Kentucky's). Kentucky's construction employment accounts for much of Kentucky's poor performance in goods-producing employment, both since 1980 and over the entire 16-year period. The national employment index for construction increased between 1980 and 1985, whereas Kentucky's construction employment declined. Thus, the nation also had greater construction employment growth than did Kentucky over the 16-year period. In the services-producing industries, similar patterns of growth since 1980 are shown for both Kentucky and the nation, but Kentucky's growth was less in four of the industries and essentially identical in one (trade).

TABLE 4-C
Nonagricultural Wage and Salary Employment Growth, Goods-Producing versus Services-Producing Industries, Kentucky and the United States, 1970-1985
(Index Numbers: 1980 = 100)

Industry Group	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985
Goods-Producing																
Kentucky																
Total Goods-Producing	85.8	86.5	90.9	96.6	99.1	91.5	96.7	102.3	106.8	108.6	100.0	98.0	90.3	85.7	91.4	91.6
Mining	53.8	57.3	59.2	59.9	73.9	88.1	89.1	97.4	99.8	103.0	100.0	103.1	100.2	80.4	86.8	83.2
Construction	88.3	91.5	95.3	97.3	92.7	86.3	93.3	100.7	117.3	119.2	100.0	91.3	86.5	80.7	87.0	93.2
Manufacturing	91.4	91.0	96.0	103.5	105.2	93.3	98.9	103.5	105.8	107.3	100.0	98.6	89.2	87.8	93.3	92.8
United States																
Total Goods-Producing	91.3	88.3	90.9	96.1	96.0	88.0	91.0	95.0	100.2	103.4	100.0	99.4	92.8	90.8	96.3	96.6
Mining	60.3	59.1	60.0	61.4	67.1	72.3	75.1	79.4	84.7	91.6	100.0	111.2	108.5	91.7	93.4	88.9
Construction	80.9	82.1	86.3	92.7	91.4	82.3	83.5	89.7	99.3	105.0	100.0	96.4	89.6	90.9	101.2	107.5
Manufacturing	95.2	91.1	93.4	98.6	98.5	90.0	93.4	97.0	101.2	103.7	100.0	99.4	92.7	90.8	95.4	94.7
Services-Producing																
Kentucky																
Total Services-Producing	75.6	77.4	78.8	82.5	85.1	87.3	89.9	93.0	97.8	100.6	100.0	99.6	98.8	100.2	104.0	108.3
Transportation	87.9	88.5	89.2	92.3	93.0	89.8	90.3	95.4	99.7	102.3	100.0	99.0	95.2	91.9	95.3	98.3
Trade	72.8	75.2	75.6	80.2	82.6	85.7	90.1	94.1	100.9	103.0	100.0	99.7	99.8	101.8	108.1	113.9
Finance	66.4	68.5	70.1	73.9	78.6	79.0	82.5	88.0	92.8	97.5	100.0	100.7	99.4	102.5	106.3	109.7
Services	73.6	75.7	78.6	83.0	84.7	86.7	89.3	92.6	96.9	99.7	100.0	101.8	102.3	105.9	109.6	114.1
Government	79.4	80.6	81.7	83.9	87.7	91.0	92.1	92.5	95.6	98.7	100.0	97.2	95.0	94.6	95.6	98.5
United States																
Total Services-Producing	74.9	76.4	79.0	82.4	84.5	85.5	87.9	91.0	95.4	98.5	100.0	101.3	101.5	103.4	108.0	111.7
Transportation	87.6	86.9	87.8	90.8	91.9	88.7	89.0	91.6	95.9	100.0	100.0	100.7	99.0	97.3	100.5	102.2
Trade	74.3	75.7	78.0	82.0	83.8	84.0	87.6	91.4	96.7	99.8	100.0	101.3	100.9	102.9	109.3	113.6
Finance	70.3	71.9	74.6	78.8	81.2	80.8	83.1	86.8	91.8	96.7	100.0	102.7	103.9	106.7	111.0	115.6
Services	69.3	70.8	74.2	77.9	79.7	81.6	84.6	88.3	93.4	97.1	100.0	103.4	105.6	109.3	115.3	120.1
Government	80.0	82.3	84.7	87.0	89.8	92.6	93.3	94.8	97.2	98.6	100.0	98.6	97.5	97.8	93.9	100.8

Source: Same as Table 4-A.

Large vs. Small Industries. Table 4-D does not combine the industry groups but instead arrays them from large to small according to employment size in Kentucky in 1985. Of interest is whether Kentucky's high employment growth industries were large, a favorable finding, or small, an unfavorable finding. Generally favorable are the high rates of Kentucky employment growth in the two industry groups with the largest number of workers—trade and services. Also, the unfavorable nature of the decline in mining employment since 1980 was softened by that industry's small employment size. High employment growth in finance has a diminished effect because of that industry's relatively small employment size. Slow growth in the manufacturing industry was unfavorable because of its relatively large employment size. Similar patterns are found in the U.S. data.

Fast vs. Slow Employment Growth Industries. Table 4-E arrays the eight industries from fast to slow according to rates of growth, based on the size of the 1985 Kentucky index values. Three industries have 1985 values above 100—services, trade, and finance, which are all services-producing industries—while the other five industries have less employment in 1985 than in 1980 (index values below 100). Of the five slow-growth industries in Kentucky, two are services-producing—government, and transportation—while the other three are goods producing—mining, construction, and manufacturing. For national employment, only two industries had less employment in 1985 than in 1980—mining and manufacturing.

High vs. Low Average Earnings Industries. Table 4-F arrays the eight industry groups from high to low according to average annual earnings in Kentucky in 1985 (see Table 2-D). For Kentucky, the mining, manufacturing, and transportation industries all were well above the state average in the earnings comparisons for 1985. But employment in these industries actually declined between 1980 and 1985. Greatest employment increases were in services and trade industries, which were lowest in average earnings. Relatively large employment growth occurred in Kentucky's finance industry in which average earnings were 8 percent above the state average in 1985. Generally, the same patterns are shown in the national data.

Combining the findings from the five tables (4-B to 4-F), Kentucky's faster employment growth generally occurred in industry groups that either are relatively small in employment size, such as finance, or are large in employment size but low in average earnings, such as trade and services. Slower growth occurred in Kentucky's larger industries, such as manufacturing, or in its higher-average-earnings industries, such as manufacturing, construction, and mining. These unfortunate combinations are in addition to the overall picture of generally slow employment growth in Kentucky, especially since the late 1970s. These findings suggest that much of the cause of Kentucky's low level and slow growth in per capita personal income is Kentucky's weak wage and salary employment experience. (See Section 3.)

TABLE 4-D

Nonagricultural Wage and Salary Employment Growth, Industries Grouped according to Size, Kentucky and the United States, 1970-1985
(Index Numbers: 1980 = 100)

Industry Group	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985
Kentucky																
Trade	72.8	75.2	75.6	80.2	82.6	85.7	90.1	94.1	100.9	103.0	100.0	99.7	99.8	101.8	108.1	113.9
Services	73.6	75.7	78.6	83.0	84.7	86.7	89.3	92.6	96.9	99.7	100.0	101.8	102.3	105.9	109.6	114.1
Manufacturing	91.4	91.0	96.0	103.5	105.2	93.3	98.9	103.5	105.8	107.3	100.0	98.6	89.2	87.8	93.3	92.8
Government	79.4	80.6	81.7	83.9	87.7	91.0	92.1	92.5	95.6	98.7	100.0	97.2	95.0	94.6	95.6	98.5
Transportation	87.9	88.5	89.2	92.3	93.0	89.8	90.3	95.4	99.7	102.3	100.0	99.0	95.2	91.9	95.3	98.3
Finance	66.4	68.5	70.1	73.9	78.6	79.0	82.5	88.0	92.8	97.5	100.0	100.7	99.4	102.5	106.3	109.7
Construction	88.3	91.5	95.3	97.3	92.7	86.3	93.3	100.7	117.3	119.2	100.0	91.3	86.5	80.7	87.0	93.2
Mining	53.8	57.3	59.2	59.9	73.9	88.1	89.1	97.4	99.8	103.0	100.0	103.1	100.2	80.4	86.8	83.2
United States																
Trade	74.3	75.7	78.0	82.0	83.8	84.0	87.6	91.4	96.7	99.8	100.0	101.3	100.9	102.9	109.3	113.6
Services	69.3	70.8	74.2	77.9	79.7	81.6	84.6	88.3	93.4	97.1	100.0	103.4	105.6	109.3	115.3	120.1
Manufacturing	95.2	91.1	93.4	98.6	98.5	90.0	93.4	97.0	101.2	103.7	100.0	99.4	92.7	90.8	95.4	94.7
Government	80.0	82.3	84.7	87.0	89.8	92.6	93.3	94.8	97.2	98.6	100.0	98.6	97.5	97.8	98.9	100.8
Transportation	87.6	86.9	87.8	90.8	91.9	88.7	89.0	91.6	95.9	100.0	100.0	100.7	99.0	97.3	100.5	102.2
Finance	70.3	71.9	74.6	78.8	81.2	80.8	83.1	86.8	91.8	96.7	100.0	102.7	103.9	106.7	111.0	115.6
Construction	80.9	82.1	86.3	92.7	91.4	82.3	83.5	89.7	99.3	105.0	100.0	96.4	89.6	90.9	101.2	107.5
Mining	60.3	59.1	60.0	61.4	67.1	72.3	75.1	79.4	84.7	91.6	100.0	111.2	108.5	91.7	93.4	88.9

Source: Same as Table 4-A.

Note: Industries are arranged from largest to smallest as determined by the number of employees in each industry in Kentucky in 1985.

TABLE 4-E

Nonagricultural Wage and Salary Employment Growth, Industries Grouped according to Rate of Employment Growth, Kentucky and the United States, 1970-1985
(Index Numbers: 1980 = 100)

Industry Group	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985
Kentucky																
Services	73.6	75.7	78.6	83.0	84.7	86.7	89.3	92.6	96.9	99.7	100.0	101.8	102.3	105.9	109.6	114.1
Trade	72.8	75.2	75.6	80.2	82.6	85.7	90.1	94.1	100.9	103.0	100.0	99.7	99.8	101.8	108.1	113.9
Finance	66.4	68.5	70.1	73.9	78.6	79.0	82.5	88.0	92.8	97.5	100.0	100.7	99.4	102.5	106.3	109.7
Government	79.4	80.6	81.7	83.9	87.7	91.0	92.1	92.5	95.6	98.7	100.0	97.2	95.0	94.6	95.6	98.5
Transportation	87.9	88.5	89.2	92.3	93.0	89.8	90.3	95.4	99.7	102.3	100.0	99.0	95.2	91.9	95.3	98.3
Construction	88.3	91.5	95.3	97.3	92.7	86.3	93.3	100.7	117.3	119.2	100.0	91.3	86.5	80.7	87.0	93.2
Manufacturing	91.4	91.0	96.0	103.5	105.2	93.3	98.9	103.5	105.8	107.3	100.0	98.6	89.2	87.8	93.3	92.8
Mining	53.8	57.3	59.2	59.9	73.9	88.1	89.1	97.4	99.8	103.0	100.0	103.1	100.2	80.4	86.8	83.2
United States																
Services	69.3	70.8	74.2	77.9	79.7	81.6	84.6	88.3	93.4	97.1	100.0	103.4	105.6	109.3	115.3	120.1
Finance	70.3	71.9	74.6	78.8	81.2	80.8	83.1	86.8	91.8	96.7	100.0	102.7	103.9	106.7	111.0	115.6
Trade	74.3	75.7	78.0	82.0	83.8	84.0	87.6	91.4	96.7	99.8	100.0	101.3	100.9	102.9	109.3	113.6
Construction	80.9	82.1	86.3	92.7	91.4	82.3	83.5	89.7	99.3	105.0	100.0	96.4	89.6	90.9	101.2	107.5
Transportation	87.6	86.9	87.8	90.8	91.9	88.7	89.0	91.6	95.9	100.0	100.0	100.7	99.0	97.3	100.5	102.2
Government	80.0	82.3	84.7	87.0	89.8	92.6	93.3	94.8	97.2	98.6	100.0	98.6	97.5	97.8	98.9	100.8
Manufacturing	95.2	91.1	93.4	98.6	98.5	90.0	93.4	97.0	101.2	103.7	100.0	99.4	92.7	90.8	95.4	94.7
Mining	60.3	59.1	60.0	61.4	67.1	72.3	75.1	79.4	84.7	91.6	100.0	111.2	108.5	91.7	93.4	88.9

Source: Same as Table 4-A.

Note: Industries are arranged according to rate of growth, from fastest to slowest, as determined by growth trends since 1980.

TABLE 4-F

Nonagricultural Wage and Salary Employment Growth, Industries Grouped according to Level of Average Earnings, Kentucky and the United States, 1970-1985
(Index Numbers: 1980 = 100)

Industry Group	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985
Kentucky																
Mining	53.8	57.3	59.2	59.9	73.9	88.1	89.1	97.4	99.8	103.0	100.0	103.1	100.2	80.4	86.8	83.2
Transportation	87.9	88.5	89.2	92.3	93.0	89.8	90.3	95.4	99.7	102.3	100.0	99.0	95.2	91.9	95.3	98.3
Manufacturing	91.4	91.0	96.0	103.5	105.2	93.3	98.9	103.5	105.8	107.3	100.0	98.6	89.2	87.8	93.3	92.8
Finance	66.4	68.5	70.1	73.9	78.6	79.0	82.5	88.0	92.8	97.5	100.0	100.7	99.4	102.5	106.3	109.7
Construction	88.3	91.5	95.3	97.3	92.7	86.3	93.3	100.7	117.3	119.2	100.0	91.3	86.5	80.7	87.0	93.2
Government	79.4	80.6	81.7	83.9	87.7	91.0	92.1	92.5	95.6	98.7	100.0	97.2	95.0	94.6	95.6	98.5
Services	73.6	75.7	78.6	83.0	84.7	86.7	89.3	92.6	96.9	99.7	100.0	101.8	102.3	105.9	109.6	114.1
Trade	72.8	75.2	75.6	80.2	82.6	85.7	90.1	94.1	100.9	103.0	100.0	99.7	99.8	101.8	108.1	113.9
United States																
Mining	60.3	59.1	60.0	61.4	67.1	72.3	75.1	79.4	84.7	91.6	100.0	111.2	108.5	91.7	93.4	88.9
Transportation	87.6	86.9	87.8	90.8	91.9	88.7	89.0	91.6	95.9	100.0	100.0	100.7	99.0	97.3	100.5	102.2
Manufacturing	95.2	91.1	93.4	98.6	98.5	90.0	93.4	97.0	101.2	103.7	100.0	99.4	92.7	90.8	95.4	94.7
Finance	70.3	71.9	74.6	78.8	81.2	80.8	83.1	86.8	91.8	96.7	100.0	102.7	103.9	106.7	111.0	115.6
Construction	80.9	82.1	86.3	92.7	91.4	82.3	83.5	89.7	99.3	105.0	100.0	96.4	89.6	90.9	101.2	107.5
Government	80.0	82.3	84.7	87.0	89.8	92.6	93.3	94.8	97.2	98.6	100.0	98.6	97.5	97.8	98.9	100.8
Services	69.3	70.8	74.2	77.9	79.7	81.6	84.6	88.3	93.4	97.1	100.0	103.4	105.6	109.3	115.3	120.1
Trade	74.3	75.7	78.0	82.0	83.8	84.0	87.6	91.4	96.7	99.8	100.0	101.3	100.9	102.9	109.3	113.6

Source: Same as Table 4-A.

Note: Industries are arranged according to level of average earnings, from highest to lowest, as determined by average earnings in Kentucky in 1985.

FIGURE 4-A

Nonagricultural Wage and Salary Employment Growth, Total, Kentucky and the United States, 1970-1985 (Index Numbers: 1980 = 100)

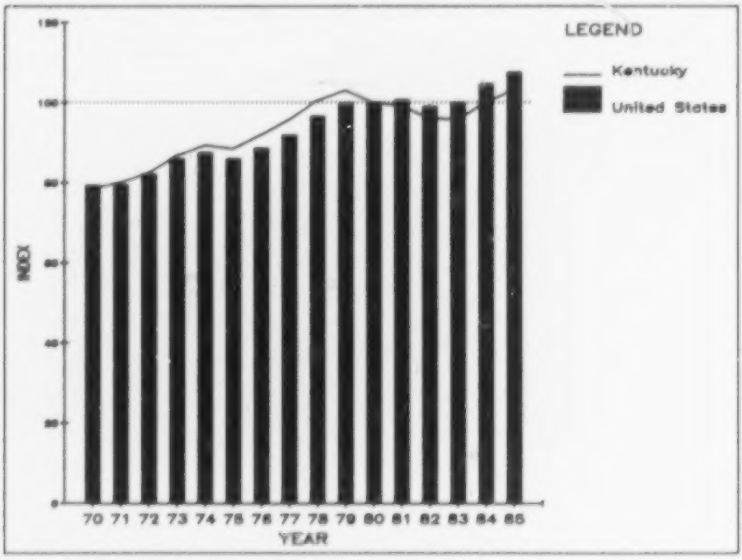
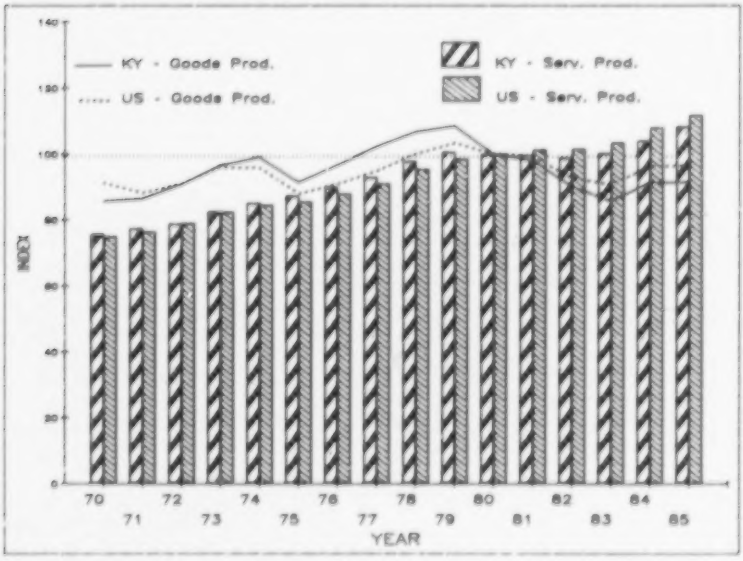


FIGURE 4-B

Nonagricultural Wage and Salary Employment Growth, Total Goods-Producing versus Total Services-Producing Industries, Kentucky and the United States, 1970-1985 (Index Numbers: 1980 = 100)



5. Coal Industry Statistics

The coal industry statistics in this section are in addition to the average annual earnings statistics presented in Table 2-D and the employment and income statistics presented in Tables 4-A through 4-F. Coal production statistics are presented for 1960, 1970, and 1980 through 1985 for the nation's three major coal producing regions and by states in those regions. Note that Kentucky's Eastern coalfields are in the U.S. Appalachian region; Kentucky's Western coalfields are in the nation's Interior region; and the nation's Western region excludes all of Kentucky.

Two types of analyses are applied to the production data. Table 5-A converts state and regional data to percentages of total national coal production in order to emphasize size differences among regions and states. The same data are presented in Table 5-B, but production totals of each state and region are converted to index numbers (1980 = 100) to emphasize degrees of change over the period 1960 through 1985. In addition, Kentucky coal industry statistics are compared with national totals in Table 5-C according to production, wage and salary employment, and wage and salary workers' incomes, with each set of totals expressed as index numbers (1980 = 100). The tables' notes describe several differences and changes in definitions and measurement over the years.

Coal Production

Relative importance of the three national regions in total coal production has changed markedly over the period 1960 through 1985, as shown in Table 5-A. The Appalachian region's share of the national production fell from 72.7 percent in 1960 to 48.1 percent in 1985, a decline of 24.8 percentage points. The Interior region's share declined from 23.8 to 21.4 percent, a loss of only 2.4 points. The combined decline of these two regions (27.2 points) is the increase shown by the Western region, where production increased from 3.5 to 30.6 percent between 1960 and 1985. By far the largest producer in the Western region is Wyoming, with its share of the national total increasing from 0.5 percent in 1960 to 6.0 percent in 1985.

Kentucky's Eastern coalfields are in the nation's Appalachian region, where regional production declined greatly as a percentage of the national total between 1960 and 1985. The expectation that a similar decline occurred in Kentucky's Eastern coalfields is not shown by the data. Indeed, share of national production for Kentucky's Eastern coalfields increased between 1960 and 1981 and later declined only slightly. West Virginia, in contrast, declined in its share of the national total almost by one-half between 1960 and 1985. For Kentucky's Western coalfields, the changes between 1960 and 1985 also differed markedly from the Interior region totals, but the Kentucky changes were unfavorable. The share of national production from Kentucky's Western coalfields declined from 7.4 per-

TABLE 5-A

Distribution of U.S. Coal Production,
By Coal-Producing Regions and States, Selected Years, 1960-1985

Coal Producing Region and State	1960	1970	1980	1981	1982	1983	1984	1985
U.S. Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Appalachian Total	72.7	69.3	53.1	52.2	51.4	48.7	49.3	48.1
Alabama	3.1	3.4	3.3	3.0	3.2	3.0	3.0	3.2
Georgia	*	—	—	—	—	*	*	—
Kentucky, Eastern	8.7	12.0	12.8	14.2	13.1	12.0	12.9	12.6
Maryland	0.2	0.3	0.5	0.5	0.5	0.4	0.5	0.3
Ohio	8.2	9.2	4.7	4.4	4.4	4.3	4.4	4.0
Pennsylvania	15.7	13.3	11.3	10.2	9.4	8.9	8.6	8.0
Tennessee	1.4	1.4	1.1	1.2	0.9	0.8	0.8	0.8
Virginia	6.7	5.8	4.9	5.0	4.7	4.4	4.5	4.6
West Virginia	28.6	23.9	14.6	13.8	15.4	14.8	14.6	14.5
Interior Total	23.8	24.9	21.4	20.4	21.4	22.3	22.2	21.4
Arkansas	*	*	*	*	*	*	*	*
Illinois	11.1	10.8	7.6	6.4	7.2	7.3	7.2	6.7
Indiana	3.7	3.7	3.8	3.6	3.8	4.1	4.2	3.8
Iowa	0.3	0.2	*	0.1	*	*	*	*
Kansas	0.2	0.3	0.1	0.2	0.2	0.2	0.1	0.1
Kentucky, Western	7.4	8.8	4.9	4.8	4.7	4.6	4.7	4.4
Louisiana	—	—	—	—	—	—	—	*
Missouri	0.7	0.7	0.7	0.6	0.6	0.6	0.8	0.6
Oklahoma	0.3	0.4	0.6	0.7	0.6	0.5	0.5	0.4
Texas	—	—	3.7	4.0	4.2	5.0	4.6	5.2
Western Total	3.5	5.8	25.5	27.4	27.2	29.0	28.5	30.6
Alaska	0.2	0.1	*	0.1	0.1	0.1	*	0.2
Arizona	*	*	1.3	1.4	1.5	1.5	1.3	1.1
California	—	—	—	—	—	—	—	*
Colorado	0.9	1.0	2.3	2.4	2.2	2.2	2.0	2.0
Montana	*	0.6	3.6	4.1	3.3	3.7	3.7	3.8
New Mexico	*	1.2	2.3	2.3	2.4	2.6	2.4	2.5
North Dakota	0.6	0.9	2.1	2.2	2.1	2.5	2.5	3.1
South Dakota	*	—	—	—	—	—	—	—
Utah	1.2	0.8	1.6	1.7	2.0	1.5	1.4	1.5
Washington	*	*	0.6	0.6	0.5	0.5	0.4	0.5
Wyoming	0.5	1.2	11.5	12.6	13.2	14.4	14.7	16.0

* Less than 0.1 percent.

Source: U.S. Department of the Interior, Bureau of Mines and Minerals, *Minerals Yearbook*, issues for 1960 and 1970; U.S. Department of Energy, Energy Information Administration, *Coal Production* (under several titles), issues for 1980 to 1985; Kentucky data are through the Kentucky Economic Information System.

Note: Traditionally, coal production data reported bituminous (including subbituminous) and lignite coal production. Beginning with data for 1979, production figures reported above also include anthracite. There is no lignite nor anthracite production in Kentucky. Also, beginning with data for 1978, total coal production excludes production from mines producing less than 10,000 short tons of coal during the year.

cent in 1960 to 4.4 percent in 1985. Compared with the Interior region's total, Kentucky's Western coalfields declined in production from 31.1 to 20.6 percent, between 1960 and 1985 (7.4 as a percentage of 23.8, and 4.4 as a percentage of 21.4).

The relative decline in Kentucky's Western coalfields combined with the relative increase in Kentucky's Eastern coalfields, show total coal production in Kentucky to be a relatively stable share of total national production. The total of Kentucky's

TABLE 5-B

Growth in Coal Production
By Coal-Producing Regions and States, Selected Years, 1960-1985
(Index Numbers: 1980 = 100)

Coal Producing Region and State	1960	1970	1980	1981	1982	1983	1984	1985
U.S. Total	50	73	100	99	101	94	108	106
Appalachian Total	69	95	100	97	98	86	100	96
Alabama	48	76	100	90	97	87	100	102
Kentucky, Eastern	34	69	100	109	103	88	109	105
Maryland	20	43	100	112	100	83	108	77
Ohio	87	141	100	91	93	86	100	90
Pennsylvania	70	87	100	89	84	74	82	76
Tennessee	65	90	100	106	80	72	79	80
Virginia	69	86	100	100	96	85	98	100
West Virginia	99	120	100	93	106	95	108	106
Interior Total	56	85	100	94	101	98	112	106
Arkansas	225	147	100	120	76	34	33	37
Illinois	74	104	100	83	97	91	102	95
Indiana	50	72	100	94	102	103	121	108
Iowa	182	168	100	122	96	63	90	101
Kansas	88	161	100	135	139	125	131	98
Kentucky, Western	76	131	100	97	96	88	104	96
Missouri	53	81	100	89	97	91	123	102
Oklahoma	25	45	100	107	89	68	85	62
Texas	0	0	100	109	115	129	136	151
Western Total	7	17	100	106	108	107	121	128
Alaska	99	75	100	111	114	108	118	197
Arizona	0	1	100	106	113	105	106	88
Colorado	19	31	100	103	95	87	93	89
Montana	1	12	100	112	93	97	110	111
New Mexico	2	38	100	97	103	106	110	115
North Dakota	15	33	100	107	105	113	131	159
Utah	37	36	100	103	128	89	93	96
Washington	4	1	100	90	81	66	75	86
Wyoming	2	8	100	108	114	118	138	148

Source: Same as Table 5-A.

Note: Georgia, Louisiana, California, and South Dakota had no coal production in 1980. Therefore, index values (with 1980 as the base year) for these states cannot be computed and the states are not shown in this table.

coal production was 16.1 percent in 1960 and 17.0 percent in 1985. Most of the large changes in shares of total coal production for national regions and for Kentucky occurred between 1960 and 1980, with much smaller changes occurring since 1980. For example, comparing the two years 1980 and 1985, the Appalachian region's share declined 5 percentage points, the Interior region's share remain unchanged, and the Western region's share increased 5.1 points. Production in Kentucky's Eastern coalfields declined 0.2 points, in Kentucky's Western coalfields declined 0.5 points, and in Kentucky overall declined 0.7 points.

Because Table 5-B is based on the same coal production data as used in Table 5-A, the same general picture is shown but the emphasis is changed. The index numbers in Table 5-B emphasize rates of change instead of shares of totals as in Table 5-A. Readers are reminded that large or small percentage *changes* over the years do not suggest large or small importance in total production. For example, Alaska's coal production almost doubled between 1980 and 1985, but its share of national production was only 0.2 percent in 1985.

Probably the most relevant comparisons to be made using the index numbers in Table 5-B are: regional totals compared with the national total; and particular states compared with regional and national totals. For example, production in the Appalachian region grew modestly between 1960 and 1980 and declined slightly since 1980, while the national total increased by a large degree between 1960 and 1980 and increased slightly since 1980. The Interior region performed much like the nation. For the Western region, very large growth occurred between 1960 and 1980, and above-average growth occurred after 1980. Kentucky's Eastern coalfields increased production at above the national rate between 1960 and 1980 and performed at approximately the national average since 1980. For Kentucky's Western coalfields, the large increase in production between 1960 and 1970 was partly offset by the large decline between 1970 and 1980 and the generally unchanged production since 1980. Comparing 1985 with 1984, declines are shown for the nation (2 percentage points), the Appalachian region (4 points), the Interior region (6 points), the Kentucky Eastern coalfields (4 points), and the Kentucky Western coalfields (8 points). Production in the nation's Western region, however, increased by 7 percentage points between 1984 and 1985.

Coal Industry Employment, Earnings, and Production

Table 5-C compares Kentucky coal statistics with national totals according to three measures: production, employment, and earnings. Amounts are shown as index numbers (1980 = 100) for each year 1970 through 1985. The production picture is one of modest decline over the period for Kentucky's coal industry relative to the nation's. That is, the national performance was weak, but Kentucky's performance was weaker. The percentage point increase between 1970 and 1985 was 18 for Kentucky and 32 for the nation. Between 1970 and 1980,

TABLE 5-C

Coal Mining Production, Total Employment, and Total Earnings, Kentucky and the United States, 1970-1985 (Index Numbers: 1980 = 100)

Year	Coal Production		Coal Mining Employment		Coal Mining Earnings	
	Kentucky	United States	Kentucky	United States	Kentucky	United States
1970	83	74	48	57	18	23
1971	80	68	52	58	21	24
1972	81	73	55	63	23	28
1973	85	72	55	63	27	31
1974	91	74	71	71	44	43
1975	96	79	87	85	60	59
1976	96	83	88	91	61	63
1977	97	84	97	95	77	75
1978	90	81	100	93	85	82
1979	100	94	103	101	90	89
1980	100	100	100	100	100	100
1981	105	99	103	95	107	103
1982	100	101	99	97	109	111
1983	87	94	79	79	91	96
1984	106	108	85	80	106	109
1985	101	106	82	76	105	108

Source: Source for coal production data is the Energy Information Administration of the U.S. Department of Energy. Employment data and income data are from the Bureau of Economic Analysis, U.S. Department of Commerce; all Kentucky data are through the Kentucky Economic Information System.

Note: As used in this table, coal refers to bituminous coal, lignite and anthracite. The data include production from all mines, including those with less than 10,000 tons of production.

Kentucky's increase was 17 points while the nation's increase was 26 points. Since 1980, Kentucky's increase was 1 point while the nation's increase was 6 points. Between 1984 and 1985, Kentucky's coal production declined 5 points while the nation's declined 2 points. Note that these differences between Kentucky and the nation are within the overall picture of only modest production increases since the late 1970s for both Kentucky and the nation.

Comparisons based on employment and earnings data encounter the problem that the original earnings data are in dollar values that show exaggerated increase when affected by inflation. Consequently, much larger increases in the earnings series than in the employment series are not meaningful. Better comparisons are made between Kentucky and the nation according to a particular measure, and also between the production and employment measures which are not exaggerated by inflation.

Mining employment declined both in Kentucky and nationally, since the high year of 1979. Kentucky's decline was 21 percentage points between 1979 and 1985, which was smaller than the national decline of 25 points. In production

data, the relationship was reversed, with Kentucky showing smaller-than-national increase. Possible reasons for Kentucky's better-than-national performance since 1979 in employment are the increased importance of Kentucky's Eastern coalfields relative to its Western coalfields, the greater use of labor (per ton of coal) in underground mining than in surface mining, and the greater importance of underground mining in Kentucky's Eastern coalfields. Nevertheless, Kentucky's better-than-national performance in mining employment since 1979 cannot be regarded as a favorable sign, because mining employment in Kentucky still *declined* by about 20 percent between 1979 and 1985.

FIGURE 5-A

Growth in Coal Production: Appalachian Region Total, and Eastern Kentucky, Interior Region Total and Western Kentucky; Selected Years, 1960-1985 (Index Numbers: 1980 = 100)

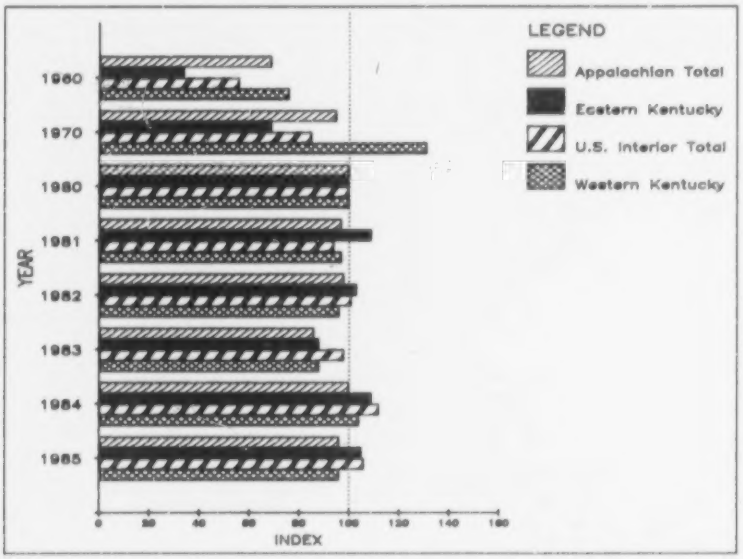
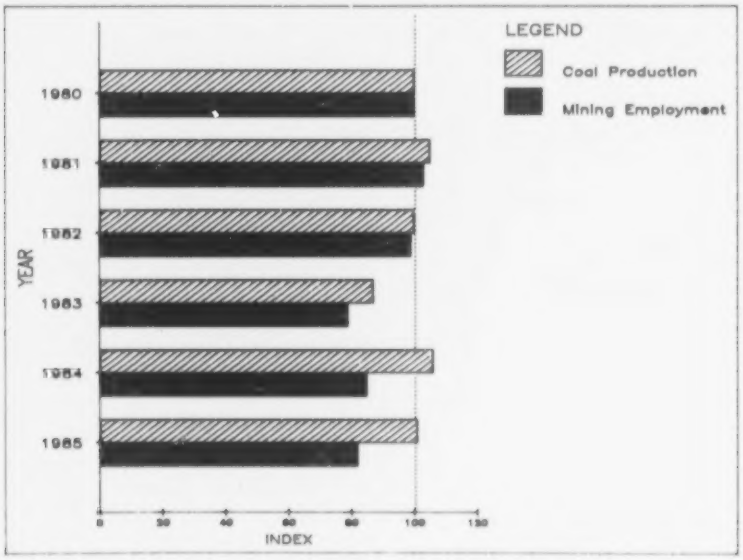


FIGURE 5-B

Coal Mining Production and Total Employment, Kentucky, 1980-1985 (Index Numbers: 1980 = 100)



6. Agricultural Statistics

Agriculture in Kentucky is compared with that in the nation and in the group of 12 Southeastern states according to total farm labor and proprietors' income. Data are presented in two forms: percentages of totals, to emphasize relative importance; and index numbers, to emphasize degrees of change over the years. Table 6-A presents amounts for 1958, 1961, 1964, 1967, and 1970 through 1985, with the farm income amounts shown as percentages of total personal income. In Table 6-B, the years covered are 1970 through 1985, with the farm income amounts shown as index numbers (1980 = 100). Of interest are the importance of agriculture as a source of personal income as it differs between Kentucky, the Southeast, and the nation, and how rates of growth differ and change over the years. Note that these tables use Bureau of Economic Analysis (BEA) data and therefore are affected by that agency's major revision of income and employment data since 1970. Differences between the previous data and the revised data are of special interest because generally, the picture of Kentucky's *relative* economic performance is weakened by the revisions. Both the previous and the revised data are included in both tables.

Farm Income

Table 6-A shows that agriculture accounts for a larger share of total personal income in Kentucky than in either the nation or the Southeast, for all of the years shown from 1958 through 1985, and in both the previous data and the revised data. Moreover, this degree of importance of agriculture in Kentucky has not changed significantly over the years shown. But for Kentucky as well as the nation and the Southeast, agriculture has declined as a source of total personal income over the period, although the data show cyclical variations normal in economic data over the years.

Probably the most interesting comparisons to be made in Table 6-A are between the previous data and the revised data. As a general observation, there were more reductions than increases because of the revision; the Kentucky reductions were largest and most frequent; the Southeast had the fewest and smallest reductions; and the reductions in the nation were only slightly larger than in the Southeast. Thus, the revised data show Kentucky agriculture to be a considerably less important source of total personal income than the previous data had shown. Kentucky is still above both the nation and the Southeast in importance of agriculture in total personal income, but the degree of difference is now shown to be smaller.

TABLE 6-A

Total Farm Labor and Proprietors' Income as a Percent of Total Personal Income
Kentucky, the Southeast Region, and the United States, 1958-1985

	Percent of Total Personal Income					
	Kentucky		Southeast		United States	
Year	Previous Data	Revised Data	Previous Data	Revised Data	Previous Data	Revised Data
1958	8.2%	—	6.4%	—	4.3%	—
1961	7.9	—	5.8	—	3.6	—
1964	5.6	—	4.8	—	2.8	—
1967	5.4	—	3.7	—	2.6	—
1970	4.3	4.2%	3.0	3.0%	2.3	2.2%
1971	4.1	4.1	2.8	2.9	2.2	2.2
1972	4.6	4.5	3.0	3.0	2.4	2.4
1973	4.9	4.6	3.8	3.7	3.5	3.4
1974	5.0	4.7	3.3	3.2	2.7	2.6
1975	3.5	3.2	2.6	2.6	2.4	2.3
1976	3.8	3.3	2.4	2.5	1.9	1.9
1977	3.8	3.7	2.0	2.1	1.7	1.7
1978	3.4	3.0	2.4	2.3	1.9	1.8
1979	3.5	3.3	2.2	2.0	2.0	1.8
1980	2.8	2.7	1.4	1.3	1.4	1.2
1981	3.8	3.6	1.7	1.6	1.6	1.4
1982	3.4	2.9	1.5	1.6	1.2	1.2
1983	1.7	1.2	1.1	1.1	0.9	0.8
1984	3.5	3.0	1.6	1.6	1.4	1.2
1985	—	2.3	—	1.2	—	1.1

Source: U.S. Department of Commerce, Bureau of Economic Analysis, through the Kentucky Economic Information System.

Growth in Farm Income

Table 6-B compares Kentucky, the nation, and the Southeast over the period 1970 through 1985 according to total farm labor and proprietors' income, with amounts converted to index numbers for both the previous and revised data. Because of the greater downward effect of the data revision on Kentucky data than on the data for the nation and the Southeast, the index number comparisons should also show that Kentucky's farm income growth, relative to that of the nation and the Southeast, was less than shown in previous annual economic reports.

Kentucky's growth in farm labor and proprietors' income was the same in both data sets between 1970 and 1980, but growth shown for Kentucky since 1980 was reduced by the data revision. For the Southeast, the revised values are larger than the previous values in all years shown except 1979. Much the same is shown in the national data, although the degrees of change were smaller than in the Southeast data. But while Kentucky fared worse in the data revision, Kentucky's growth in farm labor and proprietors' income was still above the national average

TABLE 6-B

Growth in Farm Labor and Proprietors' Income
Kentucky, the Southeast Region, and the United States, 1970-1985
(Index Numbers: 1980 = 100)

	Kentucky		Southeast		United States	
Year	Previous Data	Revised Data	Previous Data	Revised Data	Previous Data	Revised Data
1970	55	55	69	74	62	66
1971	57	57	73	78	64	68
1972	71	71	85	91	77	82
1973	83	82	126	130	127	131
1974	98	93	121	123	108	113
1975	74	69	104	110	103	108
1976	89	81	106	117	87	95
1977	101	100	99	109	90	96
1978	100	91	136	139	114	118
1979	115	113	142	138	132	132
1980	100	100	100	100	100	100
1981	153	148	137	142	132	128
1982	144	128	131	142	109	110
1983	73	52	104	110	88	83
1984	171	149	169	174	147	137
1985	—	117	—	140	—	130

Source: U.S. Department of Commerce, Bureau of Economic Analysis, through the Kentucky Economic Information System.

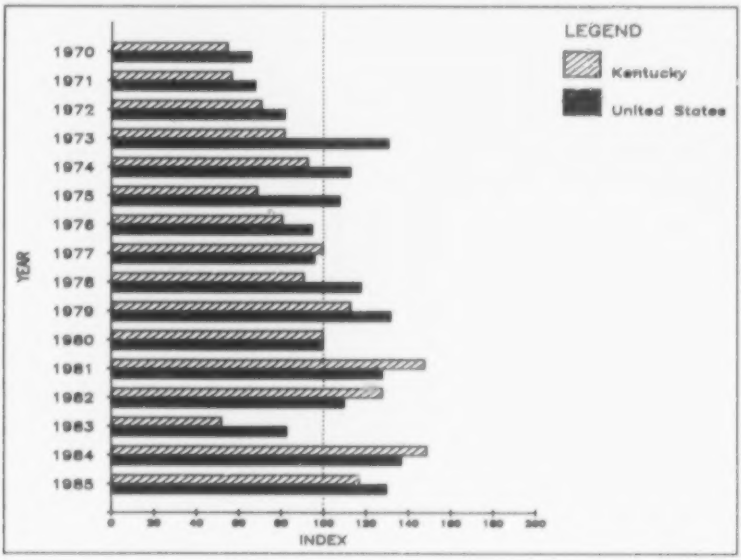
Note: Because tobacco, an important income source in Kentucky agriculture, is marketed in December and January and the relative shares sold between these two months vary over the years, the unusually low value for 1983 most likely was influenced by these factors. That is, part of the 1983 Kentucky tobacco crop was counted as sold in 1982 or 1984.

over the period 1970 through 1984. Kentucky's indexed values increased from 55 to 149 in the revised data between 1970 and 1984, an increase of 94 percentage points, whereas the national revised series increased only 71 points. The revised series for the Southeast increased 100 points during the period. From 1984 to 1985, the revised series decreased 32 points for Kentucky, 34 points for the Southeast, and only 7 points for the nation.

It appears, therefore, that Kentucky's agricultural situation has not been unfavorable as compared with the nation, in terms of farm labor and proprietors' income over the entire period 1970 through 1985. In the 1980s, the Kentucky revised data are comparable to the national data, but are unfavorable when compared with the Southeast data. For exampie, if the revised index values for 1981 and 1985 are summed, reflecting total growth in income over the period, the total amounts are 594 for Kentucky, 588 for the nation, and 708 for the Southeast. Within a generally depressed agricultural situation nationally, Kentucky's performance in recent years appears to have been about average, while the Southeast has performed above the average.

FIGURE 6-A

Growth in Farm Labor and Proprietors' Income, Kentucky and the United States, 1970-1985 (Index Numbers: 1980 = 100)



7. Construction Industry Statistics

The four data series used in this section to compare construction activity in Kentucky with the national performance are selected because they are based on comparable methods for Kentucky and national data over several decades, and are issued by responsible private and federal government agencies.

Earnings and Contracts Awarded

Table 7-A compares Kentucky and the United States for the period 1970 through 1985, with the data presented as index numbers (1980 = 100). Series A is total earnings in the construction industry, and suggests the amounts of actual construction activity taking place in particular years as measured by income payments to laborers and proprietors. Series B, C, and D are based on the value of construction contracts awarded. These series apportion contract values according to the year in which the contract was awarded, but the actual construction activity is usually spread over several years. There is also the possibility of the contracted activity being reduced or eliminated. Consequently, the one series and the group of three series differ as to apportionment of values among the years.

TABLE 7-A
Measures of Construction Activity, Kentucky and the United States, 1970-1985
(Index Numbers: 1980 = 100)

	Series A Earnings, Contract Construction		Value of Construction Contracts Awarded					
			Series B Total Building and Nonbuilding		Series C Residential and Nonresidential Building		Series D Residential Building	
Year	Kentucky	United States	Kentucky	United States	Kentucky	United States	Kentucky	United States
1970	39	38	54	46	47	42	50	39
1971	43	42	76	54	59	52	66	54
1972	48	46	69	61	75	62	89	71
1973	53	52	68	67	66	67	73	72
1974	54	55	68	63	65	59	62	53
1975	55	56	66	62	58	53	56	49
1976	67	64	83	74	73	63	76	69
1977	77	72	103	94	102	83	108	97
1978	98	85	159	108	125	103	138	118
1979	107	96	140	114	113	107	120	117
1980	100	100	100	100	100	100	100	100
1981	95	101	157	103	113	104	98	95
1982	98	103	121	105	94	102	92	93
1983	95	110	122	130	127	134	134	147
1984	104	126	113	141	123	150	135	159
1985	108	135	131	153	135	161	125	168

Source: F.W. Dodge Corp., Division of McGraw-Hill, Inc.; and U.S. Department of Commerce, Bureau of Economic Analysis; through the Kentucky Economic Information System.

The four series also differ according to the types of construction activity included. Series A and B are very broad in that they include all types of contract construction: buildings, highways, bridges, and dams. Series D includes only residential buildings, while Series C includes both residential and nonresidential buildings. All four series are relevant for picturing activity in the construction industry.

Table 7-A shows that generally, Kentucky's construction industry performed above the national rate in the period 1970 to about 1978, but performed below the national rate since 1978. Some differences can be seen between the four series, such as Kentucky's relatively high activity in Series B from 1977 through 1982. Also, the peak of construction activity around 1978 to 1979, according to several of the Kentucky series, is not as pronounced or does not appear in the national series. For example, the national values in Series A, the earnings index, increased each year after 1975 while the Kentucky values increased through 1979 and declined to a plateau in the 1980s. Generally the same patterns are shown in Series C, although the 1980s were not as depressed in Series C as in Series A, for both Kentucky and the nation. Also, Kentucky's position relative to the nation was a bit more favorable in Series C in the 1980s. Kentucky's larger increases in Series B than in Series C, both in size of the index values in the periods 1978 to 1979 and 1981 to 1982, and as compared to the national values, possibly was caused by highway construction which is included in Series B but not in C. Both Kentucky and the nation improved between 1984 and 1985 in Series A, B, and C, but only the nation improved in Series D. Overall, Kentucky's construction index series paint an unfavorable picture, especially in the priod since 1978.

Mortgage Interest Rates

Table 7-B presents a modest attempt to test whether fluctuations in construction activities are related to interest rate fluctuations. High mortgage interest rates are notoriously punitive on residential construction, in which a large proportion of purchases are financed with long-term mortgages. For the period 1970 through 1985, mortgage interest rates are indexed (1980 = 100), and this series is compared with the Kentucky and U.S. values for Series D, the value of construction contracts awarded for residential building, which also is indexed (1980 = 100). These three indexed series are all based on the same year and can be compared easily.

One would expect that all three indexed series would increase over the years because of inflation. The two construction contract series are based on dollar amounts that show exaggerated increases over the years because of inflation. Mortgage interest rates also rise as lenders ask for higher interest returns to offset the purchasing power losses due to inflation. One would also expect that increased values in the interest rate index series would be accompanied or followed by decreased values in the construction index series, and vice versa, for reduced in-

TABLE 7-B

Effective Mortgage Interest Rates, National Average and Value of Residential Construction Contracts Awarded, Kentucky and the United States, 1970-1985

Year	Effective Mortgage Interest Rates		Value of Construction Contracts Awarded, Residential Building	
			Kentucky	United States
	(Percent)	(Index: 1980 = 100)	(Index: 1980 = 100)	
1970	8.4	65	50	39
1971	7.7	60	66	54
1972	7.5	58	89	71
1973	8.0	62	73	72
1974	9.0	70	62	53
1975	9.2	71	56	49
1976	9.1	71	76	69
1977	9.0	70	108	97
1978	9.6	74	138	118
1979	10.9	84	120	117
1980	12.9	100	100	100
1981	15.0	116	98	95
1982	15.3	119	92	93
1983	12.8	99	134	147
1984	12.5	97	135	159
1985	11.7	91	125	168

Source: Federal Home Loan Bank Board; and F.W. Dodge Corporation, Division of McGraw-Hill, Inc.; through the Kentucky Economic Information System.

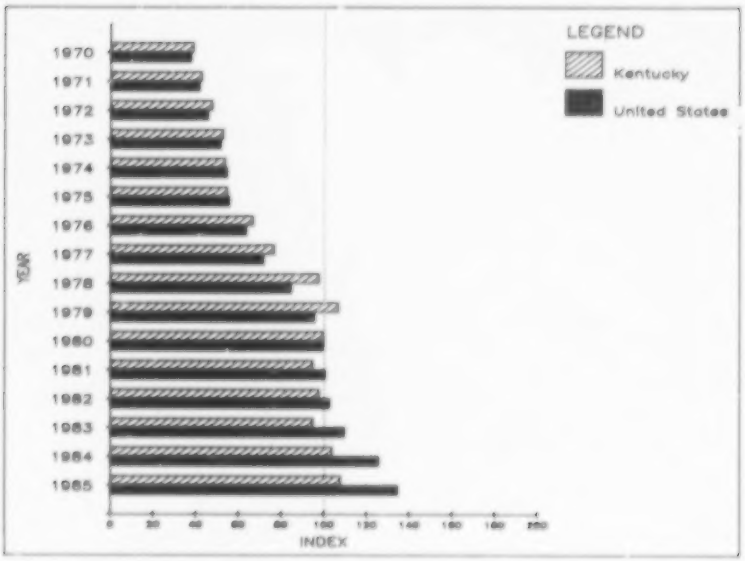
Note: Effective mortgage interest rates are the national averages for loans closed by all major lenders for conventional home mortgages.

terest rates. This cause and effect relationship might not be precise, however, because construction activities, and interest rates fluctuate to some degree along with general business fluctuations. Also, the cause and effect relationship might be subject to lags because of delayed reaction by home builders and buyers.

Taking these several factors into account, there does seem to be a reverse relationship between the interest rate series and the two construction series shown in Table 7-B, especially in the period 1978 through 1985. Rising interest rates in 1978 through 1982 were accompanied by declines in construction activity. And reduced interest rates from 1982 to 1985 were accompanied by rising construction activity. But the relationship is not sufficiently precise to allow predictions. For example, essentially the same mortgage interest rates apply in Kentucky as in the nation, but the declines in interest rates since 1982 were accompanied by much greater increases in residential building nationally than in Kentucky. This discrepancy suggests the possibility that other important causal forces are present.

FIGURE 7-A

Earnings, Contract Construction,
Kentucky and the United States, 1970-1985
(Index Numbers: 1980 = 100)



PART II
DETAILED ANALYSIS OF EMPLOYMENT BY INDUSTRY GROUPS

Introduction

Part II of this report, containing Sections 8 and 9, presents an analysis of the details of employment data for the many subgroups in the eight major industry groups included in Section 4 and for the subgroups in agriculture and the agricultural services/forestry/fisheries group. The employment data in Sections 8 and 9 are for wage and salary workers *plus* proprietors, whereas the employment data used in Section 4 were for wage and salary workers only. Thus, three additional groups are included in Section 8 and 9: proprietors in all industry groups; wage and salary workers in agriculture; and wage and salary workers in the agricultural services/forestry/fisheries industry group. These additions were made to give a picture of Kentucky employment that is more complete than that based on the more common eight-industry grouping used in Section 4.

Major emphasis is placed on differences between goods-producing and services-producing industry groups. The goods-producing groups are presented in Section 8 and the services-producing groups in Section 9. For all groups studied, the analytical methods used and the years covered are the same. In one type of table, subgroups are expressed as percentages of totals to emphasize relative importance of the subgroups in 1985. In another type of table, *relative* index numbers are used to show growth in employment for the period 1980 through 1985. To compute relative index values, annual values are converted to index numbers (1980 = 100) for Kentucky and the nation. Then, the Kentucky index values are expressed as percentages of the corresponding national index values, creating Kentucky *relative* index numbers. These relative values are included in the tables and show growth in employment in Kentucky relative to the nation.

While the data presented in the tables in Part II are detailed because of the many subgroups, it is not intended that the descriptive analysis be detailed. Major conclusions were presented in Section 4 concerning changes over the years among the *major* industry groups, with no analysis of the numerous industry subgroups. Because the same general relationships shown in Section 4 are found in Sections 8 and 9, no attempt is made to analyze and describe them in further detail. Instead, data for the subgroups are presented to allow readers to see how characteristics and changes for particular subgroups are related to the characteristics and changes of their major industry group. Only the more important aspects of

the detailed statistics are noted. Readers interested in the overall picture should refer to Section 4. For convenience, a brief summary of the Section 4 findings is presented.

Section 4 gave the general picture of improved economic performance in Kentucky, relative to the nation, through the late 1970s. But following these years, Kentucky's economic performance did not keep up with the nation's, and therefore, declined in relative terms. Through data presented as index number series, relative improvement was shown by the Kentucky index values gaining on or rising above the national index values as both of these index series changed over the years. Relative worsening was shown by the Kentucky index values losing ground to, or falling below, the national values as the series changed over the years. The tendency for Kentucky's relative improvement to peak in the late 1970s, with relative worsening thereafter, was pervasive. All of the industry groups exhibited this tendency, although degrees of improvement and worsening differed among them, and peak years differed slightly.

In addition to this generally unfavorable picture of Kentucky's economic performance, the major revision of employment and income statistics from 1969 through 1985, by the Bureau of Economic Analysis of the U.S. Department of Commerce, caused Kentucky income and employment values to be lower relative to the national values, than they were in the non-revised data used in earlier editions of the *Annual Economic Report*. Because of the data revisions, Kentucky's relative improvement through the late 1970s was not as large as previously reported, and its decline since the late 1970s was greater.

Another dimension of Kentucky's relatively poor economic performance in the 1980s is that trade and services, the state's lowest wage industries, not only were largest in relative size but also had the highest employment growth. The finance industry group had above-average earnings but accounted for only a small portion of total employment. Four of the Kentucky industry groups with above-average annual earnings (mining, construction, manufacturing, and transportation) had fewer persons employed in 1985 than they had in 1980.

The detailed analysis of industry subgroups presented in Part II is intended to be a supplement to Section 4. The detail in Sections 8 and 9 can be viewed in conjunction with the Section 4 analysis to identify the contributions of particular subgroups to the overall picture of Kentucky employment performance.

8. Employment in Goods-Producing Industry Subgroups

Employment data for the four major industries and their subgroups concerned mainly with production of goods are presented in this section for the period 1980 through 1985 for Kentucky and the nation. These major industry groups are: manufacturing, mining, construction, and agriculture. Employment data are for both wage and salary workers and proprietors. In 1985, employment in these four groups comprised 31.3 percent of total employment, with 15.4 percent in manufacturing, 3.0 percent in mining, 5.1 percent in construction, and 7.8 percent in agriculture.

Two tables are presented for each major industry group. The first table for each group shows subgroups as percentages of the group total, according to number employed in 1985. Large employment growth in an industry subgroup of relatively small size may have less influence on changes in total employment than does small employment growth in an industry subgroup of relatively large size. The purpose of showing subgroups as percentages of the total is to indicate the relative size of employment in each subgroup and thereby provide information useful for interpreting the importance of the employment changes. The second type of table shows annual employment for 1980 through 1985, with numbers of persons employed expressed as Kentucky *relative* index numbers (1980 = 100). Kentucky and national employment data are converted to index numbers, and the Kentucky index values are expressed as percentages of the national values to create Kentucky relative index numbers. Improvement in Kentucky's employment situation relative to the nation is indicated by rising values in the Kentucky relative index number series; declining values indicate worsening. Also, Kentucky relative index values which are less than 100 indicate that Kentucky's employment growth since 1980, was less than national employment growth; values above 100 indicate faster employment growth.

Manufacturing Employment

Table 8-A shows 1985 manufacturing employment in Kentucky and the nation, by subgroups, as percentages of total manufacturing employment. The durable goods total is slightly smaller in Kentucky than the nation. The three largest subgroups according to employment are machinery (except electrical), electric and electronic equipment, and apparel and other textile products, for both Kentucky and the nation.

The Kentucky relative index numbers in Table 8-B generally are less than 100, indicating slower employment growth in Kentucky's manufacturing industry than in the nation during the 1980s. Some recovery in 1985 is indicated, however.

TABLE 8-A

Total Employment in the Manufacturing Industry, by Subgroups, Kentucky and the United States, 1985

(Subgroups as Percents of Total Industry Employment)

Industry Subgroups	Kentucky	United States
Manufacturing, Total	100.0%	100.0%
Nondurable Goods	44.9	40.2
Food and Kindred Products	7.4	8.2
Textile Mill Products	2.2	3.6
Apparel and Other Textile Products	10.2	5.9
Paper and Allied Products	3.0	3.4
Printing and Publishing	6.9	7.8
Chemicals and Allied Products	5.0	5.3
Petroleum and Coal Products	1.4	0.9
Tobacco Manufactures	2.9	0.3
Rubber and Miscellaneous Plastics Products	5.0	4.0
Leather and Leather Products	0.8	0.9
Durable Goods	55.1	59.8
Lumber and Wood Products	4.7	4.0
Furniture and Fixtures	2.1	2.6
Primary Metal Industries	6.6	4.1
Fabricated Metal Products	5.8	7.5
Machinery, Except Electrical	13.0	11.2
Electric and Electronic Equipment	10.8	11.2
Transportation Equipment Excl. Motor Vehicles	0.7	5.6
Motor Vehicles and Equipment	5.3	4.4
Stone, Clay, and Glass Products	3.1	3.2
Instruments and Related Products	1.4	3.6
Miscellaneous Manufacturing Industries	1.7	2.3

Source: U.S. Department of Commerce, Bureau of Economic Analysis, through the Kentucky Economic Information System.

TABLE 8-B

Total Employment Growth in the Manufacturing Industry, by Subgroups, Kentucky Relative to the United States, 1980-1985
(Index Numbers: 1980 = 100)

Industry Subgroups	1980	1981	1982	1983	1984	1985
Manufacturing, Total	100	99	96	97	98	98
Nondurable Goods	100	99	99	98	97	100
Food and Kindred Products	100	99	100	98	95	94
Textile Mill Products	100	99	109	105	104	108
Apparel and Other Textile Products	100	97	100	102	99	107
Paper and Allied Products	100	99	99	99	105	107
Printing and Publishing	100	100	97	97	99	102
Chemicals and Allied Products	100	97	92	89	90	89
Petroleum and Coal Products	100	103	107	110	115	117
Tobacco Manufactures	100	98	93	85	88	84
Rubber and Miscellaneous Plastics Products	100	108	108	113	115	125
Leather and Leather Products	100	93	92	82	73	73
Durable Goods	100	99	93	95	98	96
Lumber and Wood Products	100	100	96	94	98	97
Furniture and Fixtures	100	89	85	91	94	95
Primary Metal Industries	100	101	108	121	131	134
Fabricated Metal Products	100	98	93	92	89	90
Machinery, Except Electrical	100	98	93	94	99	99
Electric and Electronic Equipment	100	98	84	84	83	76
Transportation Equipment Excl. Motor Vehicles	100	97	71	71	90	96
Motor Vehicles and Equipment	100	110	114	116	127	129
Stone, Clay, and Glass Products	100	93	95	94	90	96
Instruments and Related Products	100	112	110	115	121	112
Miscellaneous Manufacturing Industries	100	96	97	105	99	103

Source: Same as Table 8-A.

Note: These relative index numbers are calculated by first converting the Kentucky and U.S. data to index numbers (1980 = 100) and then expressing Kentucky's index values as a percentage of the nation's index values.

This general pattern is shown in total manufacturing employment, wherein the low years were 1982 and 1983, with recovery or near recovery by 1985. Both total durable and total nondurable goods manufacturing employment were depressed after 1980, although the nondurable goods total was less depressed and recovered in 1985. The largest declines were in the electric and electronic equipment, the leather and leather products, and the tobacco manufactures subgroups. The largest increases since 1980 were in the rubber and miscellaneous plastics products, primary metals industries, and motor vehicle equipment subgroups.

Mining Employment

The data on mining employment provide an excellent example of how data on relative size of subgroups (Table 8-C) can amplify and clarify data on employment change (Table 8-D). Coal mining accounted for 79.1 percent of Kentucky's total mining employment in 1985, but only 16.3 percent nationally. Oil and gas extraction accounted for 69.5 percent of total mining employment nationally but only 16.1 percent in Kentucky. Coal mining employment declined after 1980, both in Kentucky and the nation, while oil and gas extraction employment increased. Consequently, since 1980, the Kentucky relative index values for total mining employment were below 100, but were above 100 for employment in all other Kentucky mining subgroups. This apparent contradiction is explained by the dominance of coal in Kentucky mining employment and the coal industry's especially depressed state from 1983 through 1985. The employment situation in Kentucky mining is bright everywhere but in coal mining, but coal mining is dominant in Kentucky mining employment.

TABLE 8-C
Total Employment in the Mining Industry, by Subgroups, Kentucky and the United States, 1985
(Subgroups as Percents of Total Industry Employment)

Industry Subgroups	Kentucky	United States
Mining, Total	100.0%	100.0%
Coal Mining	79.1	16.3
Oil and Gas Extraction	16.1	69.5
Metal Mining	0.1	4.7
Nonmetallic Minerals, Except Fuels	4.6	9.5

Source: Same as Table 8-A.

TABLE 8-D

Total Employment Growth in the Mining Industry, by Subgroups
Kentucky Relative to the United States, 1980-1985
(Index Numbers: 1980 = 100)

Industry Subgroups	1980	1981	1982	1983	1984	1985
Mining, Total	100	92	91	84	89	87
Coal Mining	100	108	103	101	106	107
Oil and Gas Extraction	100	94	102	118	120	126
Metal Mining	100	59	111	138	127	166
Nonmetallic Minerals, Except Fuels	100	98	106	104	102	100

Source and Note: Same as Table 8-B.

Construction Employment

Construction employment in Kentucky in 1985, shown in Table 8-E, was distributed with 60.5 percent in the special trade contractors subgroup, 25.3 percent in the general building contractors subgroup, and 14.2 percent in the heavy construction contractors subgroup. The national distribution was similar. Construction employment since 1980 has been depressed in Kentucky relative to the nation, as shown by the Kentucky relative index numbers in Table 8-F which are below 100 in all but one case.

Farm Employment

Farm proprietors accounted for 85.8 percent of Kentucky farm employment in 1985, whereas proprietors accounted for only 70.6 percent nationally, as shown in Table 8-G. For the dominant proprietors group in Kentucky, employment growth since 1980 has been stronger than nationally, as indicated in Table 8-H by Kentucky relative index values above 100. The improvement in farm proprietors' employment has been steady since 1980, while the improvement in wage and salary workers' employment was strong in most years since 1980 but dropped substantially in 1985. Overall, the employment situation in Kentucky agriculture has been favorable, compared with the national situation. This results from an increase in employment in agriculture in Kentucky for most of the period since 1980, while agricultural employment in the nation declined.

TABLE 8-E

Total Employment in the Construction Industry, by Subgroups Kentucky and the United States, 1985 (Subgroups as Percents of Total Industry Employment)

Industry Subgroups	Kentucky	United States
Construction, Total	100.0%	100.0%
General Building Contractors	25.3	26.6
Heavy Construction Contractors	14.2	13.5
Special Trade Contractors	60.5	59.9

Source: Same as Table 8-A.

TABLE 8-F

Total Employment Growth in the Construction Industry, by Subgroups, Kentucky Relative to the United States, 1980-1985 (Index Numbers: 1980 = 100)

Industry Subgroups	1980	1981	1982	1983	1984	1985
Construction, Total	100	96	98	92	90	91
General Building Contractors	100	98	107	97	90	93
Heavy Construction Contractors	100	94	97	83	93	94
Special Trade Contractors	100	96	95	93	89	89

Source and Note: Same as Table 8-B.

TABLE 8-G

Total Farm Employment by Subgroups, Kentucky and the United States, 1985 (Subgroups as Percents of Total Farm Employment)

Farm Subgroups	Kentucky	United States
Farm, Total	100.0%	100.0%
Proprietors	85.8	70.6
Wage and Salary Workers	14.2	29.4

Source: Same as Table 8-A.

TABLE 8-H

Total Farm Employment Growth, by Subgroups, Kentucky Relative to the United States, 1980-1985
(Index Numbers: 1980 = 100)

Farm Subgroups	1980	1981	1982	1983	1984	1985
Farm, Total	100	104	107	108	108	107
Proprietors	100	102	103	104	104	105
Wage and Salary Workers	100	107	111	111	111	93

Source and Note: Same as Table 8-B.

FIGURE 8-A

Total Employment Growth in Selected Manufacturing Industry Subgroups, Kentucky Relative to the United States, 1980-1985 (Index Numbers: 1980 = 100)

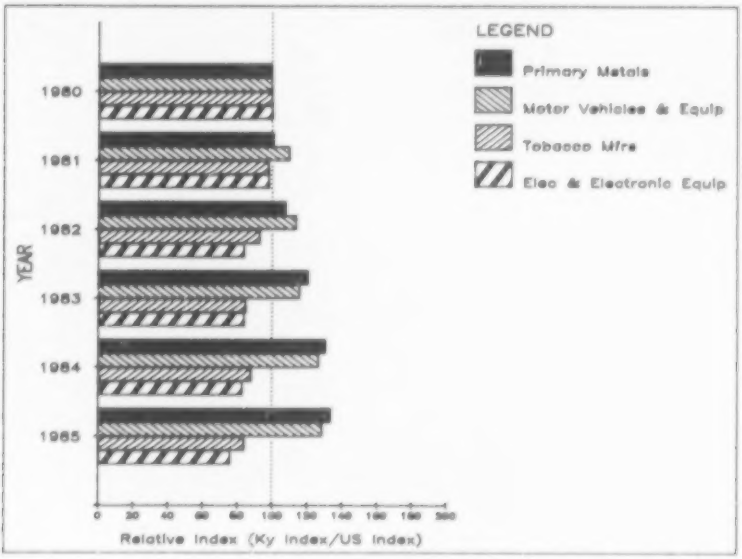


FIGURE 8-B

Total Employment in the Mining Industry Subgroups, as Percents of Total Mining Employment, Kentucky and the United States, 1985

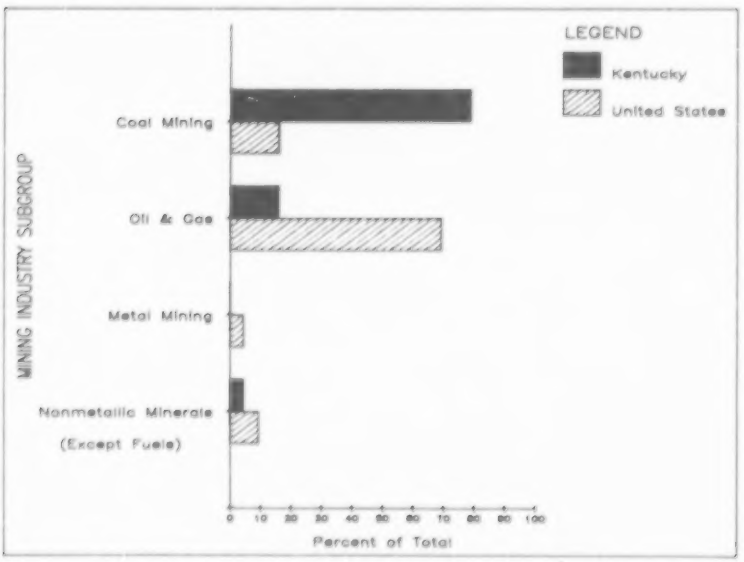


FIGURE 8-C

Total Employment Growth in the Mining Industry and Selected Subgroups, Kentucky Relative to the United States, 1980-1985 (Index Numbers: 1980 = 100)

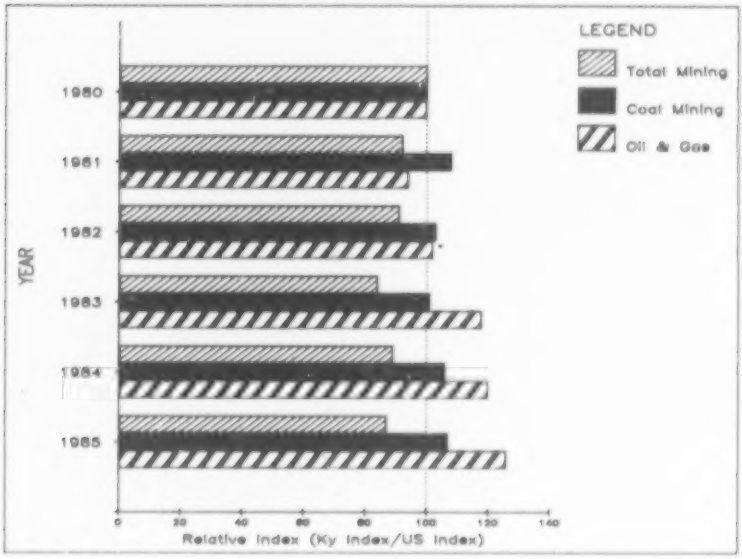


FIGURE 8-D

Total Employment Growth in the Construction Industry, by Subgroups, Kentucky Relative to the United States, 1980-1985 (Index Numbers: 1980 = 100)

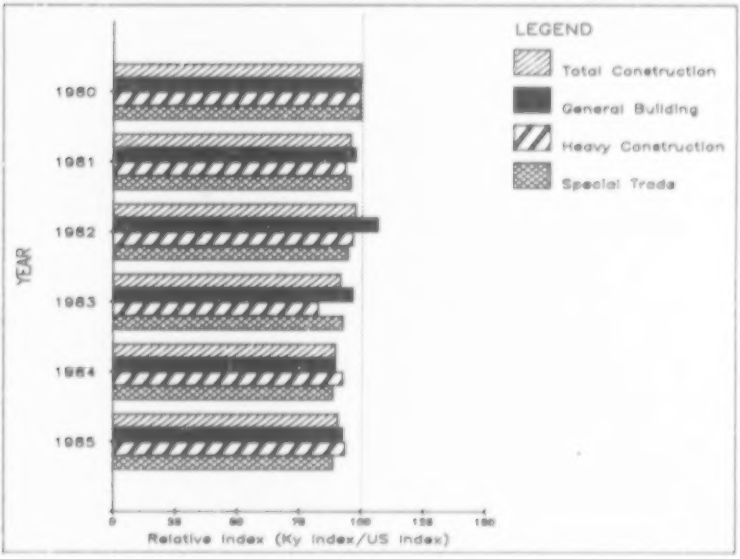


FIGURE 8-E

Total Farm Employment by Subgroups, as Percents of Total Farm Employment, Kentucky and the United States, 1985

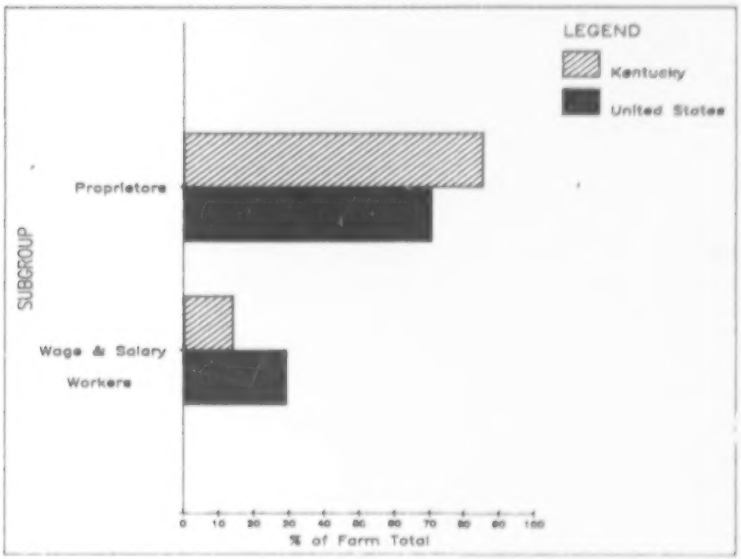
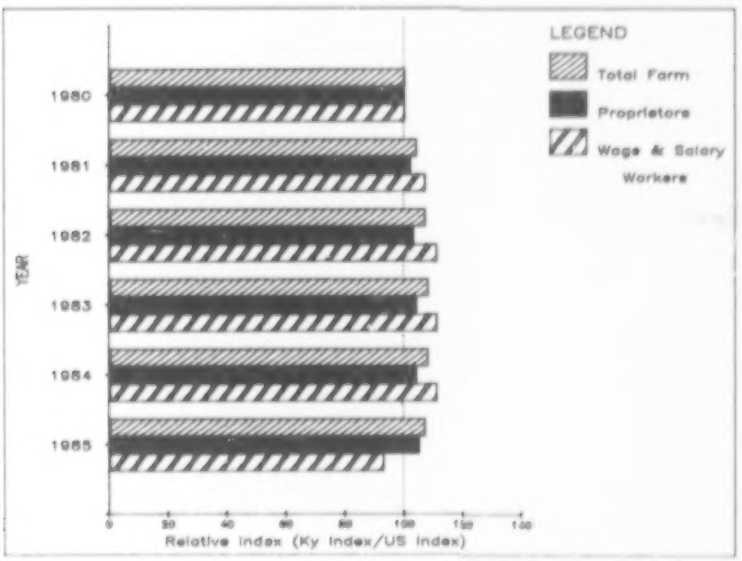


FIGURE 8-F

Total Farm Employment Growth, by Subgroups, Kentucky Relative to the United States, 1980-1985
(Index Numbers: 1980 = 100)



9. Employment in Services-Producing Industry Subgroups

Employment in the services-producing industries is examined in this section according to subgroups in six major industry groups. The period covered is 1980 through 1985, and employment data are for both wage and salary workers and proprietors in Kentucky and the nation. In 1985, employment in the six major services-producing industry groups comprised 68.9 percent of total employment, with 20.5 percent in trade, 5.7 percent in finance/insurance/real estate, 4.9 percent in transportation/communications/public utilities, 20.5 percent in services, 0.9 percent in agricultural services/forestry/fisheries, and 16.4 percent in government.

As previously described in Section 8, two types of tables are presented for each of the six industry groups. The first type of table shows each subgroup's employment as a percentage of total employment in the industry group for 1985, allowing readers to distinguish between subgroups that are large or small in employment size. The second type of table shows each subgroup's annual employment growth from 1980 through 1985, with employment amounts expressed as Kentucky *relative* index numbers (1980 = 100). Kentucky index numbers are expressed as percentages of national index numbers to create Kentucky relative index numbers. Improvement over the years, in Kentucky employment relative to the nation, is indicated by rising values in the Kentucky relative index number series; declining values indicate worsening. Also, Kentucky relative index values less than 100 indicate that Kentucky's employment growth since 1980, was less than national employment growth; values above 100 indicate faster employment growth.

Trade Employment

Table 9-A shows 1985 employment in the trade industry, with subgroups as percentages of totals. Total retail trade is four times as important as total wholesale trade in Kentucky. The largest subgroups in retail trade in Kentucky are eating and drinking places, and food stores. Also important are automotive dealers and service station and general merchandise stores. The national employment distribution in the trade industry differs from Kentucky's mainly in that wholesale trade is a slightly larger percentage of total trade employment nationally, than in Kentucky.

Table 9-B shows employment growth since 1980 to be unfavorable for Kentucky relative to the nation in many subgroups, as indicated by Kentucky relative index values below 100. Some recovery occurred in 1985, however. Total wholesale trade employment grew at less than the national rate from 1983 through 1985, while total retail trade employment grew at nearly the national rate. The largest employment increase since 1980 was in the general merchandise stores subgroup. Employment in the automotive dealers and service stations subgroup has been weak since 1980.

TABLE 9-A

Total Employment in the Trade Industry, by Subgroups, Kentucky and the United States, 1985

(Subgroups as Percents of Total Industry Employment)

Industry Subgroups	Kentucky	United States
Trade, Total	100.0%	100.0%
Wholesale Trade	19.8	23.5
Retail Trade	80.2	76.5
Building Materials and Farm Equipment	3.3	3.1
General Merchandise Stores	9.1	9.1
Food Stores	13.7	11.7
Automotive Dealers and Service Stations	9.6	8.1
Apparel and Accessory Stores	4.3	4.4
Furniture and Home Furnishings Stores	3.5	3.4
Eating and Drinking Places	22.3	23.0
Miscellaneous Retail Stores	14.4	13.6

Source: U.S. Department of Commerce, Bureau of Economic Analysis, through the Kentucky Economic Information System.

TABLE 9-B

Total Employment Growth in the Trade Industry, by Subgroups, Kentucky Relative to the United States, 1980-1985

(Index Numbers: 1980 = 100)

Industry Subgroups	1980	1981	1982	1983	1984	1985
Trade, Total	100	99	99	99	99	100
Wholesale Trade	100	99	99	97	97	97
Retail Trade	100	99	99	99	99	100
Building Materials and Farm Equipment	100	98	97	97	99	102
General Merchandise Stores	100	100	104	105	106	107
Food Stores	100	99	101	101	100	100
Automotive Dealers and Service Stations	100	97	96	96	95	97
Apparel and Accessory Stores	100	99	101	99	98	96
Furniture and Home Furnishings Stores	100	99	100	99	99	102
Eating and Drinking Places	100	97	98	99	100	103
Miscellaneous Retail Stores	100	99	100	98	97	97

Source: Same as Table 9-A.

Note: These relative index numbers are calculated by first converting the Kentucky and U.S. data to index numbers (1980 = 100) and then expressing Kentucky's index values as a percentage of the nation's index values.

Finance, Insurance, and Real Estate Employment

In 1985, employment in Kentucky's finance/insurance/real estate industry group (Table 9-C) was distributed as follows: 30.3 percent in the banking and credit agency subgroup, 39.4 percent in the real estate subgroup, 11.1 percent in the insurance carriers subgroup, and 11.2 percent in the insurance agents subgroup. The national distribution was similar. These four Kentucky subgroups had relative index values (Table 9-D) below 100 in the years since 1980, except for the real estate subgroup which recovered to 100 in 1985. The number of persons employed in the finance industry grew after 1980 in both Kentucky and the nation. But national growth exceeded Kentucky growth, causing the Kentucky relative index values to be less than 100 in most cases. In 1985, Kentucky relative index values for the four largest subgroups were 94 for banking and credit agencies, 92 for insurance carriers, 95 for insurance agents, and 100 for real estate. Strong employment growth occurred in the holding and other investment companies subgroup, which in 1985 accounted for 5.9 percent of Kentucky's total finance employment. Overall, Kentucky's employment growth in the finance industry group was inferior to national growth since 1980.

TABLE 9-C

Total Employment in the Finance, Insurance and Real Estate Industry, by Subgroups, Kentucky and the United States, 1985 (Subgroups as Percents of Total Industry Employment)

Industry Subgroups	Kentucky	United States
Finance, Insurance, and Real Estate, Total	100.0%	100.0%
Banking and Credit Agencies	30.3	27.0
Other Finance, Insurance, and Real Estate	69.7	73.0
Security & Commodity Brokers and Services	1.9	4.7
Insurance Carriers	11.1	14.6
Insurance Agents, Brokers, and Service	11.2	10.0
Real Estate	39.4	39.4
Combined Real Estate, Insurance, Etc.	0.2	0.3
Holding and Other Investment Companies	5.9	4.0

Source: Same as Table 9-A.

TABLE 9-D

Total Employment Growth in the Finance, Insurance and Real Estate Industry, by Subgroups, Kentucky Relative to the United States, 1980-1985 (Index Numbers: 1980 = 100)

Industry Subgroups	1980	1981	1982	1983	1984	1985
Finance, Insurance, and Real Estate, Total	100	98	97	97	97	97
Banking and Credit Agencies	100	98	95	96	95	94
Other Finance, Insurance, and Real Estate	100	99	98	98	99	99
Security & Commodity Brokers and Service	100	94	106	106	97	95
Insurance Carriers	100	99	96	96	95	92
Insurance Agents, Brokers, and Service	100	99	97	96	95	95
Real Estate	100	99	98	98	99	100
Combined Real Estate, Insurance, Etc.	100	96	110	118	112	117
Holding and Other Investment Companies	100	97	103	111	114	121

Source and Note: Same as Table 9-B.

TABLE 9-E

Total Employment in the Transportation, Communications and Public Utilities Industry, by Subgroups, Kentucky and the United States, 1985 (Subgroups as Percents of Total Industry Employment)

Industry Subgroups	Kentucky	United States
Transportation, Communications and Public Utilities, Total	100.0%	100.0%
Railroad Transportation	11.8	6.1
Trucking and Warehousing	40.6	30.6
Water Transportation	3.2	3.3
Other Transportation	9.5	20.7
Local and Interurban Passenger Transit	2.9	5.9
Transportation by Air	8.1	9.0
Pipelines, Except Natural Gas	0.2	0.3
Transportation Services	2.3	5.5
Communications	15.8	23.0
Electric, Gas, and Sanitary Services	18.2	16.2

Source: Same as Table 9-A.

Transportation, Communications, and Public Utilities Employment

Table 9-E shows transportation employment in Kentucky in 1985, to be 65.0 percent of total employment in the transportation/communications/public utilities industry, while communications employment was 16.8 percent, and electric, gas, and sanitary services was 18.2 percent. Compared with the nation, employment in Kentucky was lower in communications but higher in electric, gas, and sanitary services and in total transportation. Kentucky's employment in trucking and warehousing was 40.6 percent of the industry total compared with only 30.6 percent nationally. As shown in Table 9-F, since 1980, Kentucky has had high employment growth in trucking and warehousing, water transportation, and other transportation, which together accounted for 53.3 percent of employment in the total industry group in 1985. Slower-than-national employment growth occurred in railroad transportation, communications, and electric, gas, and sanitary services. Especially large employment growth occurred in Kentucky's transportation-by-air subgroup which in 1985, accounted for 4.1 percent of the total employment in the industry.

TABLE 9-F
Total Employment Growth in the Transportation, Communications and Public Utilities Industry, by Subgroups, Kentucky Relative to the United States, 1980-1985
(Index Numbers: 1980 = 100)

Industry Subgroups	1980	1981	1982	1983	1984	1985
Transportation, Communications and Public Utilities, Total	100	99	98	96	97	99
Railroad Transportation	100	99	96	91	92	92
Trucking and Warehousing	100	103	105	106	112	115
Water Transportation	100	97	105	112	126	135
Other Transportation	100	95	100	105	106	116
Local and Interurban Passenger Transit	100	96	100	100	92	97
Transportation by Air	100	103	110	124	138	160
Pipelines, Except Natural Gas	100	97	95	98	103	105
Transportation Services	100	85	86	89	90	93
Communications	100	97	94	91	86	84
Electric, Gas, and Sanitary Services	100	100	99	98	96	97

Source and Note: Same as Table 9-B.

Services Employment

Table 9-G shows that in 1985, the largest percentage of Kentucky services employment in the industry group was in health services (28.3 percent) followed by business services (15.1 percent). Employment in health services comprised a larger share of total employment in Kentucky than in the nation while employment in business services in Kentucky was a smaller share than in the nation. Employment growth since 1980, for Kentucky relative to the nation, was low in the total services industry group, with Kentucky relative index values declining to 96 in 1984 and 1985 (Table 9-H). Of the seven major subgroups, Kentucky's 1985 relative index values were below 100 in all but business services (105) and amusements and recreation (100). The social services subgroup was especially low at 76 in 1985. Largest growth since 1980 was in the business services subgroup. As in the trade and finance industry groups, employment in the services industry group in both Kentucky and the nation grew since 1980, if measured in number of persons employed. But Kentucky's growth was less than the nation's growth, causing the Kentucky relative index values to be below 100 in many cases.

TABLE 9-G

Total Employment in the Services Industry, by Subgroups, Kentucky and the United States, 1985

(Subgroups as Percents of Total Industry Employment)

Industry Subgroups	Kentucky	United States
Services, Total	100.0%	100.0%
Hotels and Other Lodging Places	4.4	4.9
Personal Services	9.2	7.4
Private Households	7.1	5.4
Business and Repair Services	22.4	27.1
Business Services	15.1	21.0
Auto Repair, Services, and Garages	5.0	3.9
Miscellaneous Repair Services	2.4	2.2
Amusement and Recreation	5.1	5.3
Amusement and Recreation Services	4.6	4.2
Motion Pictures	0.5	1.1
Professional, Social and Related Services	51.7	50.0
Health Services	28.3	23.0
Legal Services	3.4	3.5
Educational Services	4.2	5.6
Social Services	3.7	4.3
Museums, Botanical and Zoological Gardens	0.1	0.1
Membership Organizations	5.3	5.1
Miscellaneous Services	6.7	8.4

Source: Same as Table 9-A.

TABLE 9-H

Total Employment Growth in the Services Industry, by Subgroups, Kentucky Relative to the United States, 1980-1985
(Index Numbers: 1980 = 100)

Industry Subgroup	1980	1981	1982	1983	1984	1985
Services, Total	100	99	97	97	96	96
Hotels and Other Lodging Places	100	96	99	100	93	91
Personal Services	100	96	95	96	95	95
Private Households	100	99	99	98	97	97
Business and Repair Services	100	98	100	101	103	105
Business Services	100	100	103	106	107	111
Auto Repair, Services, and Garages	100	101	100	102	104	104
Miscellaneous Repair Services	100	93	97	96	97	97
Amusement and Recreation	100	99	98	99	100	100
Amusement and Recreation Services	100	99	99	101	103	104
Motion Pictures	100	101	90	82	82	78
Professional, Social and Related Services	100	99	97	96	95	95
Health Services	100	101	99	100	98	99
Legal Services	100	98	99	96	95	94
Educational Services	100	105	102	98	100	101
Social Services	100	90	83	82	79	76
Museums, Botanical and Zoological Gardens	100	100	97	101	100	103
Membership Organizations	100	98	97	95	94	94
Miscellaneous Services	100	96	91	91	92	92

Source and Note: Same as Table 9-B.

Agricultural Services, Forestry and Fisheries Employment

The agricultural services/forestry/fisheries industry group accounted for only 0.9 percent of total Kentucky employment in 1985. The bulk of Kentucky's employment in this group was in agricultural services, which was 92.5 percent of the total compared with 85.8 percent nationally. Thus, forestry and fisheries employment was less important in Kentucky than in the nation, as percentages of the industry group total (Table 9-I). Growth in employment since 1980 (Table 9-J) was larger in Kentucky than in the nation, not only in the industry group total but also in all subgroups except fisheries. Growth in forestry employment was especially strong in Kentucky relative to the nation since 1980.

Government Employment

Government employment is described in Table 9-K according to three subgroups as percents of the total, for Kentucky and the nation in 1985. State and local government employment is the largest share, at 62.8 percent of total government employment in Kentucky and 69.9 percent in the nation. The other two subgroups (federal civilian and military) both reflect federal government employment and comprised 37.2 percent of the industry total in Kentucky and 30.1 percent in the nation. Kentucky's position in total government employment relative to the nation remained nearly unchanged since 1980, as shown by the fairly constant Kentucky relative index values in Table 9-L. But Kentucky's employment growth in state and local government has been less than in the nation since 1980, with Kentucky relative index values below 100 and declining up through 1985, at which time employment increased relative to the nation. Larger-than-national employment growth is shown for Kentucky in the two federal government subgroups, with military employment increasing most.

It could be argued that the employment shifts among subgroups in government employment have been favorable to Kentucky since 1980. State and local government employment is financed from tax revenue mainly collected from Kentucky resident persons and businesses. Federal government employment, in contrast, is financed by revenue collected by the federal tax system, and states with below-average levels of per capita personal income generally are below-average in federal taxes per capita. Thus, Kentucky has been spending less of its own revenue, because its state and local government employment has declined relative to the national amounts. At the same time, federal government employment has grown in Kentucky at an above-average rate without necessarily increasing Kentucky's share of federal taxes. These two changes occurred while the level of total government employment grew in Kentucky at the national rate. On net balance, therefore, Kentucky gained relative to the nation. Needless to say, there are other possible interpretations as to the gains and losses from these government employment changes.

TABLE 9-I

Total Employment in the Agricultural Services, Forestry and Fisheries Industry, by Subgroups, Kentucky and the United States, 1985 (Subgroups as Percents of Total Industry Employment)

Industry Subgroups	Kentucky	United States
Agricultural Services, Forestry, Fisheries, Total	100.0%	100.0%
Agricultural Services	92.5	85.8
Forestry, Fisheries, and Other	7.5	14.2
Forestry	6.2	5.5
Fisheries	1.2	8.1
Other	0.0	0.6

Source: Same as Table 9-A.

TABLE 9-J

Total Employment Growth in the Agricultural Services, Forestry and Fisheries Industry, by Subgroups, Kentucky Relative to the United States, 1980-1985 (Index Numbers: 1980 = 100)

Industry Subgroups	1980	1981	1982	1983	1984	1985
Agricultural Services, Forestry, Fisheries, Total	100	104	108	113	114	117
Agricultural Services	100	103	107	111	112	114
Forestry, Fisheries, and Other	100	106	127	131	130	144
Forestry	100	105	131	124	120	127
Fisheries	100	107	83	90	91	92

Source and Note: Same as Table 9-B.

TABLE 9-K

Total Employment in Government, by Subgroups, Kentucky and the United States, 1985 (Subgroups as Percents of Total Government Employment)

Industry Subgroups	Kentucky	United States
Government, Total	100.0%	100.0%
Federal, Civilian	14.7	15.9
Military	22.5	14.2
State and Local	62.8	69.9

Source: Same as Table 9-A.

TABLE 9-L

Total Employment Growth in Government, by Subgroups, Kentucky Relative to the United States, 1980-1985 (Index Numbers: 1980 = 100)

Industry Subgroups	1980	1981	1982	1983	1984	1985
Government, Total	100	100	100	100	99	100
Federal, Civilian	100	99	103	105	103	103
Military	100	103	105	107	107	106
State and Local	100	98	96	95	95	97

Source and Note: Same as Table 9-B.

FIGURE 9-A

Total Employment in the Trade Industry, by Subgroups, Kentucky, 1985

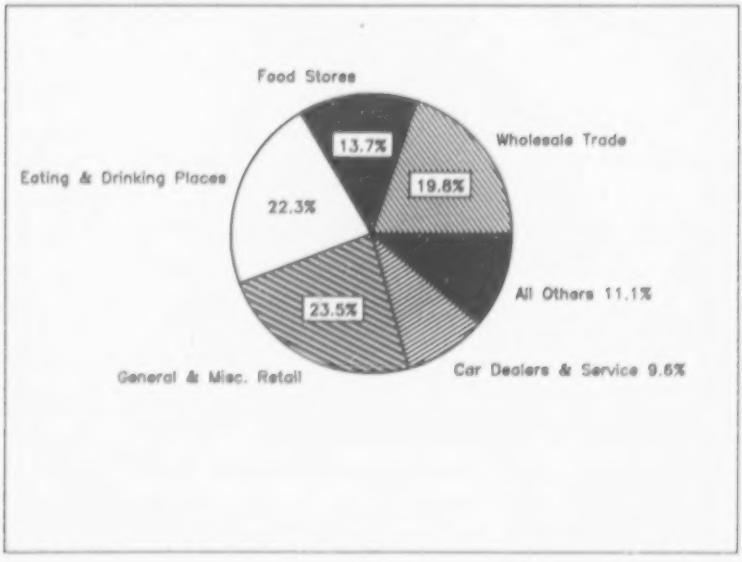


FIGURE 9-B

Total Employment Growth in the Finance, Insurance and Real Estate Industry and Selected Subgroups, Kentucky Relative to the United States, 1980-1985
(Index Numbers: 1980 = 100)

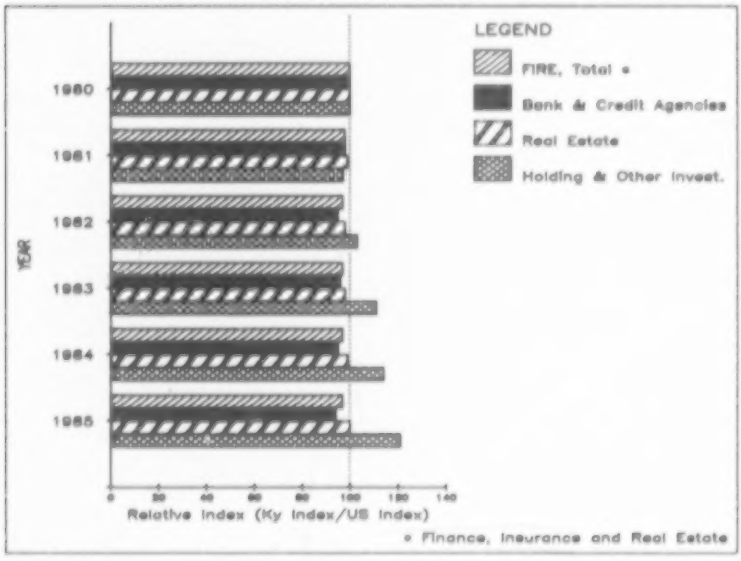


FIGURE 9-C

Total Employment in the Transportation, Communications, and Public Utilities Industry, Selected Subgroups, Kentucky, 1985

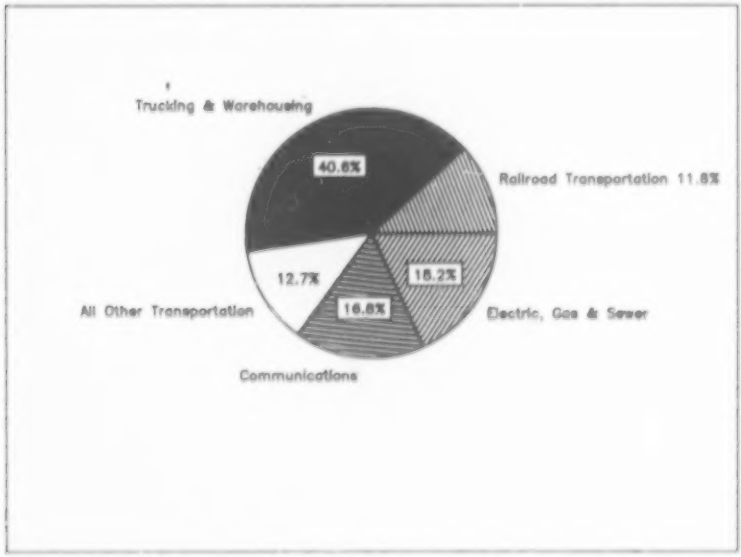


FIGURE 9-D

Total Employment Growth in the Transporation, Communications, and Public Utilities Industry, Selected Subgroups, Kentucky Relative to the United States, 1980-1985
(Index Numbers: 1980 = 100)

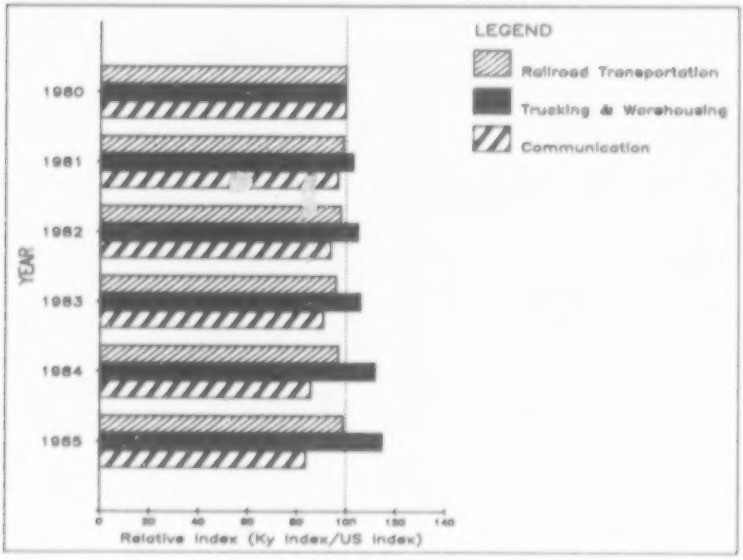


FIGURE 9-E

Total Employment in the Services Industry, Kentucky, 1985

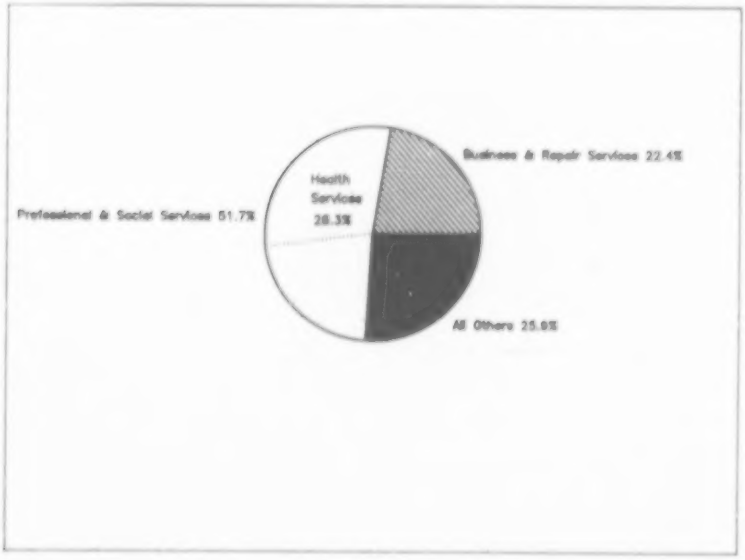


FIGURE 9-F

Total Employment Growth in the Services Industry, Selected Subgroups, Kentucky Relative to the United States, 1980-1985

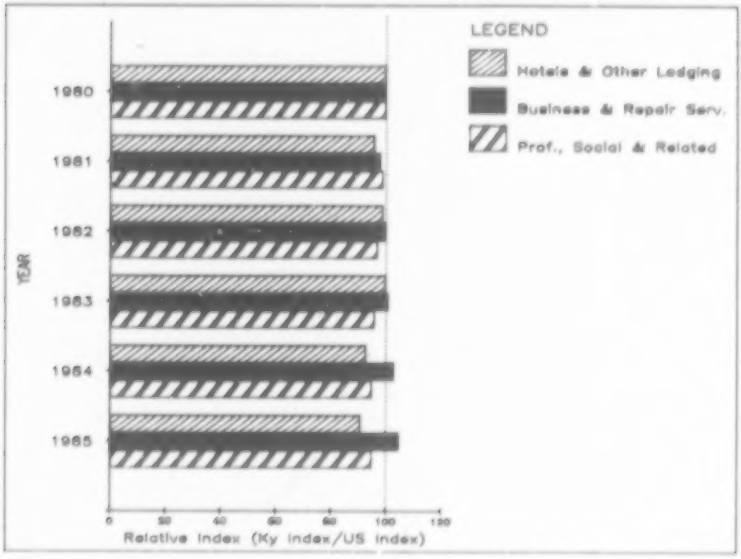
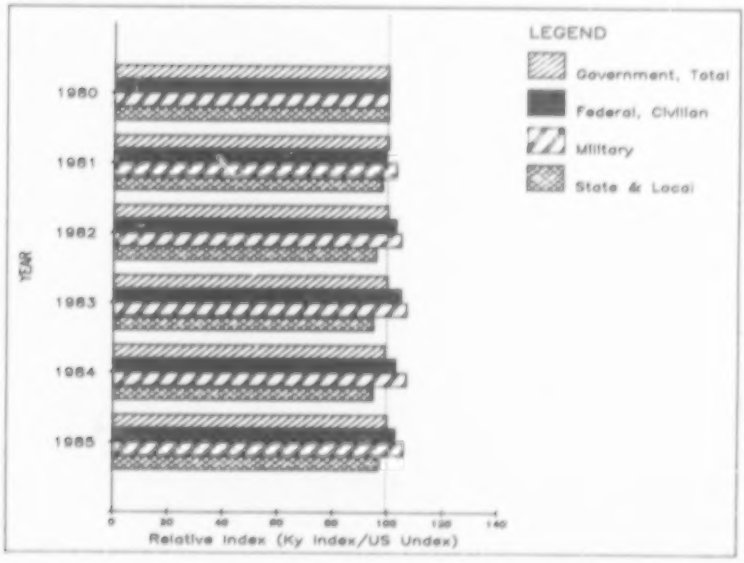


FIGURE 9-G

Total Employment Growth in Government, by Subgroups, Kentucky Relative to the United States, 1980-1985 (Index Numbers: 1980 = 100)



PART III
STATE AND LOCAL GOVERNMENT FINANCES

Introduction

Four sections (10, 11, 12, and 13) are included in Part III of this *Annual Economic Report*. These concern the revenue, expenditures, and debt activities of state and local governments, plus federal aid to these governments. Most of the comparisons are of Kentucky and the United States, for which the U.S. data is the sum of all state and local governments in the nation. Selected comparisons are made with the group of twelve Southeastern states. Data for fiscal year 1985 are included in all cases, with selective inclusion of earlier years. Most data are from the U.S. Bureau of the Census, with supplemental data from agencies of Kentucky state government. The federal-source data allow comparison of Kentucky with the nation. Where Kentucky-source data are used (mainly in Section 13 on debt), no interstate comparisons are made. Methods used to allow easy comparison of Kentucky with the nation, or of Kentucky changes over the years, are: conversion to per capita amounts; expression of parts as percentages of totals; expression of Kentucky values as percentages of national values; and conversion of annual amounts to index numbers with 1980 as the reference year in most cases.

10. Revenue of State and Local Governments

The revenues of state and local governments for Kentucky and the fifty states are compared in several ways in this section. Table 10-A is based on tax revenue per capita (that is, amounts per person on average) and tax revenue as a percentage of personal income. For convenience, Kentucky amounts are shown as percentages of national amounts. Because the taxes-to-income measure is a percentage, its value can change if changes occur in the numerator (total tax revenue) or the denominator (total personal income), or both. These component parts are converted to index numbers in Table 10-B to show relative changes over the years in Kentucky and the nation. Relative importance of particular revenue sources is shown in Table 10-C, with major revenue sources shown as percentages of total revenue, and in Table 10-D with major tax types shown as percentages of total tax revenue. Growth of revenue, in total and by sources, is shown by indexing the series for Kentucky and the nation in Table 10-E. For ease in comparing Kentucky and the nation in revenue growth, Table 10-F shows the Kentucky numbers (from Table 10-E) as percentages of the national numbers. Tables 10-G and 10-H compare actual and potential tax revenue of Kentucky and the fifty states, using a modified average-effort method based on personal income. Of interest in the comparisons in this section are how Kentucky's revenue experience differs from that of the fifty states and how these differences have changed over the years.

Tax Revenue

Table 10-A compares Kentucky with the fifty states according to the two most commonly used tax revenue measures: taxes per capita and taxes as a percentage of personal income. The period covered is 1969 through 1985, using *revised* data. The Kentucky amounts also are shown as percentages of the national amounts to allow easy recognition of changes in Kentucky's relative position. Kentucky's position in taxes per capita has tended to fluctuate over the years, with the Kentucky relative amounts declining for several years, rising substantially in one or two years, and again declining for several years. The upward jumps mostly represent major changes in tax rates and definitions, or adoption of new tax types. Declines mostly represent the failure of Kentucky to make tax revisions when other states do so, and the addition of tax exemptions to the Kentucky tax laws. Unusual movements in the period are the very large upward jump in 1979 and the substantially lower amounts for 1984 and 1985. Kentucky's relative positions in taxes per capita in 1984 and 1985, were the lowest since 1973.

Much the same picture is shown by the taxes as a percentage of personal income measure also presented in Table 10-A. However, this measure shows Kentucky to be much closer to the national average than does the taxes per capita measure. This reflects Kentucky's below-average position in per capita personal income.

TABLE 10-A
State and Local Tax Revenue Relative to Population and Personal Income, Kentucky and the Average of the 50 States, Fiscal Years 1969-1985

Fiscal Year	State and Local Tax Revenue					
	Dollars Per Capita			Percent of Personal Income		
	Kentucky	50-State Average	Kentucky as a % of 50-State Average	Kentucky	50-State Average	Kentucky as a % of 50-State Average
1969	$ 280	$381	73.6%	9.6%	10.0%	95.8%
1970	298	426	70.0	9.5	10.5	90.2
1971	315	459	68.5	9.4	10.7	88.1
1972	350	520	67.4	9.6	11.1	85.8
1973	400	573	69.9	9.8	11.1	88.5
1974	433	613	70.7	9.5	10.9	87.6
1975	487	657	74.1	10.0	10.8	92.3
1976	533	721	73.9	9.9	10.8	91.1
1977	582	800	72.7	9.7	11.0	88.6
1978	641	872	73.5	9.7	10.7	90.7
1979	714	915	78.0	9.7	10.1	96.0
1980	739	983	75.2	9.3	9.9	93.3
1981	785	1065	73.7	8.9	9.7	91.2
1982	847	1148	73.8	9.2	10.0	91.6
1983	888	1215	73.1	9.4	10.0	93.3
1984	955	1354	70.6	9.2	10.3	89.2
1985	1033	1465	70.5	9.5	10.6	90.4

Source: U.S. Department of Commerce, Bureau of the Census, *Governmental Finances*, various years; Kentucky data are through the Kentucky Economic Information System.

The *revised* data used in this year's *Annual Economic Report*, compared with the data reported last year, show Kentucky's relative positions to be higher in the two tax revenue measures, mainly because Kentucky's relative position in personal income was reduced by the revisions. Specifically, the data revisions left almost unchanged the taxes per capita amounts for Kentucky and the nation, but the revisions caused Kentucky to decline by 1.8 percentage points in per capita personal income as a percentage of the national average. Consequently, Kentucky's relative position increased as measured in taxes as a percentage of personal income. The tendency for year-to-year changes to differ between these two tax revenue measures, as well as the different effects of personal income changes on the two measures, suggest the need to compare the components of these two tax revenue measures as to how they have changed over the years.

Table 10-B uses index numbers to compare changes in tax revenue, personal income, and population over the period 1969 through 1985, for Kentucky and for the United States. The period since 1980 is of special interest because of Kentucky's declines in relative positions in the tax revenue measures in the 1980s. In Kentucky, between 1980 and 1985, growth in tax revenue (42 percent) was greater than in personal income (38 percent), suggesting that the taxes-to-income measure would show improvement for Kentucky. Table 10-A, however, shows taxes as a percentage of personal income in Kentucky to be 93.3 percent in 1980 but only 90.4 percent in 1985. This apparent inconsistency is explained by the

even larger national changes, with tax revenue increasing by 57 percent and personal income by 47 percent between 1980 and 1985. Consequently, Kentucky declined in relative position. Much the same occurred between 1983 and 1985. Kentucky's increases were 20 points for tax revenue and 18 points for personal income, while the national increases were 30 points for tax revenue and 21 points for personal income. Thus, between 1983 and 1985, Kentucky declined in relative position in the taxes-to-income measure, from 93.3 to 90.4 percent of the national average.

Kentucky's slower-than-average population growth is shown in Table 10-B, but the population differences probably are too small to affect the taxes-per-capita relationships. Therefore, Kentucky's decline in the two measures of relative tax performance is caused by the state's slower-than-national growth in tax revenue. This also is confirmed by Kentucky's decline of 2.6 points in the relative taxes-per-capita measure between 1983 and 1985.

TABLE 10-B

Growth in Total Tax Revenue of State and Local Governments, Personal Income, and Population, Kentucky and the United States, Fiscal Years 1969-1985
(Index Numbers: 1980 = 100)

	Kentucky			United States		
Year	Total Tax Revenue	Personal Income	Population	Total Tax Revenue	Personal Income	Population
1969	33	32	87	34	34	89
1970	36	35	88	39	37	90
1971	38	38	90	43	39	91
1972	43	42	91	49	43	92
1973	50	47	92	54	49	93
1974	55	53	93	58	53	94
1975	62	58	95	63	58	95
1976	69	65	96	70	64	96
1977	77	73	98	79	71	97
1978	85	81	99	87	80	98
1979	96	91	99	92	90	99
1980	100	100	100	100	100	100
1981	106	111	100	109	112	101
1982	116	117	101	119	118	102
1983	122	120	101	127	126	103
1984	131	132	102	143	138	104
1985	142	138	102	157	147	105

Source: Tax and population data are from the U.S. Department of Commerce, Bureau of the Census. Personal income data are from the U.S. Department of Commerce, Bureau of Economic Analysis. Kentucky data are through the Kentucky Economic Information System.

Major Revenue Sources

Kentucky and the nation also are compared as to relative importance of major revenue sources and major tax types. Table 10-C shows major revenue sources as percentages of total general revenue for 1960, 1965, 1970, 1975, 1980, and 1985. Kentucky obtains a larger-than-average share of its revenue from federal aid, but this difference has grown smaller over the years shown. Kentucky's portion of general revenue from federal aid exceeded that of the nation by 9.8 percentage points in 1960, falling to 4.7 points by 1985. As a consequence, exactly opposite changes are shown for Kentucky's share of general revenue from own sources. For most of the years shown, Kentucky's relative dependence on non-tax sources (charges and miscellaneous) exceeded that of the nation, but by 1985 the difference was only one percentage point.

The combined results of Kentucky's above-average reliance on federal aid and non-tax revenue cause Kentucky to place less-than-average emphasis on revenue from taxation, although in recent years this relative emphasis has shifted somewhat. In 1960, Kentucky received 61.7 percent of total general revenue from taxation while the national average was 71.5 percent, a difference of 9.8 percentage points. By the 1980s, this difference had declined to only 4.6 percentage points in 1980 and 5.7 points in 1985. Kentucky, therefore, is becoming more similar to the national average in relative importance of sources of general revenue.

Tax Revenue by Types

Table 10-D shows the relative importance of the major tax types, with amounts for the various tax types expressed as percentages of total general tax revenue. Kentucky and the nation are compared for selected years between 1978 to 1985. Differences between Kentucky and the nation in the years shown are dominated by the very large differences for property taxation. Kentucky places very low emphasis on property taxation. In 1978, Kentucky received only 18.2 percent of tax revenue from property taxes while the nation received 34.3 percent, a difference of 16.1 percentage points. In 1985, this difference was smaller, but Kentucky's use of property taxation was still below the national average by 12.1 points.

Also worth noting in Table 10-D are Kentucky's above-average dependence on motor vehicle fuel and license taxes, and the decrease in degree of this difference over the years shown. Kentucky's dependence on motor vehicle taxes exceeded the nation's by 3.2 percentage points in 1978 but by only 1.7 points in 1985. Kentucky also was above the nation in dependence on severance taxation. Because of the dominance of coal in Kentucky's severance taxation and the fluctuations in coal production, importance of this type of taxation has fluctuated in Kentucky.

Kentucky's dependence on sales and income taxation also is above the national average, but these differences have not changed much over the years shown. Note that because Kentucky's dependence on property taxation is much below the national average, its dependence on the other tax sources must be above the national average because these parts must add to 100 percent.

TABLE 10-C

Relative Importance of Major Revenue Sources of State and Local Governments, Kentucky and the Average of the 50 States, Fiscal Years 1960, 1965, 1970, 1975, 1980, and 1985
(Amounts as Percents of Total State and Local General Revenue)

	Fiscal Years											
	1960		1965		1970		1975		1980		1985	
Revenue Sources	Kentucky	50-State Average	Kentucky	50-State Average	Kentucky	50-State Average	Kentucky	50-State Average	Kentucky	50-State Average	Kentucky	50-State Average
Total General Revenue	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Federal Aid	23.6	13.8	23.2	14.9	22.8	16.7	25.6	20.6	26.8	21.7	22.5	17.8
General Revenue from Own Sources	76.4	86.2	76.8	85.1	77.2	83.3	74.4	79.4	73.2	78.3	77.5	82.2
Non-Tax Revenue	14.7	14.7	16.3	15.9	18.3	16.9	18.8	17.4	19.3	19.8	24.7	23.7
Total Tax Revenue	61.7	71.5	60.5	69.2	58.9	66.4	55.6	62.0	53.8	58.4	52.8	58.5

Source: U.S. Department of Commerce, Bureau of the Census, *Governmental Finances*, various years. Kentucky data are through the Kentucky Economic Information System.

Note: Total General Revenue, less Federal Aid, equals General Revenue from Own Sources, which is divided into Non-Tax Revenue (charges and miscellaneous) and Total Tax Revenue. Revenue other than General Revenue, such as from the Unemployment Insurance programs, is omitted.

TABLE 10-D

Relative Importance of Major Tax Types of State and Local Governments, Kentucky and the Average of the 50 States, Selected Fiscal Years 1978-1985
(Amounts as Percents of Total State and Local General Tax Revenue)

	Fiscal Years											
	1978		1980		1982		1983		1984		1985	
General Revenue Tax Types	Kentucky	50-State Average	Kentucky	50-State Average	Kentucky	50-State Average	Kentucky	50-State Average	Kentucky	50-State Average	Kentucky	50-State Average
General Sales Tax (excludes selective)	22.9%	21.4%	22.4%	23.0%	21.8%	22.7%	21.2%	22.8%	21.2%	23.5%	21.3%	24.1%
Income Taxes (Individual and Corporation)	29.2	22.7	31.2	24.8	31.0	24.7	31.1	24.4	31.0	25.5	30.9	25.5
Property Tax	18.2	34.3	18.3	30.7	17.6	30.8	18.0	31.4	18.2	30.1	17.6	29.7
Motor Vehicle Fuel and License Taxes	10.6	7.4	9.0	6.8	8.3	6.2	8.4	6.0	8.4	6.1	7.8	6.1
Severance Tax	5.5	1.3	6.5	1.9	8.2	2.9	6.7	2.6	5.9	2.3	5.9	2.1

Source: U.S. Department of Commerce, Bureau of the Census, *Governmental Finances* and *State Government Tax Collections*, various years. Kentucky data are through the Kentucky Economic Information System.

Note: Tax Revenue other than from general taxes, such as Unemployment Insurance tax revenue, is omitted. Columns do not sum to 100 percent because of omission of several small yield types of general taxes.

Growth in Revenue

Of special interest are changes over the years in revenue from the various sources, with Kentucky compared with the national average. Table 10-E uses index numbers to show changes over the period 1978 through 1985 in total general revenue and its various parts, for Kentucky and the 50-state average. Note that 1978 is the year of reference (1978 = 100) in these index series. In comparison with 1978, the 1985 values for Kentucky were below the national values in nearly all cases, indicating less-than-average growth for Kentucky revenue sources. Kentucky had slightly above average growth in federal aid and property taxation between 1978 and 1985. For all of the other revenue sources shown, Kentucky's growth was below average. Growth was slowest relative to the United States in severance taxation, with Kentucky lagging the nation by 127 percentage points in 1984 and 111 points in 1985. In 1985, relative growth also was slow in

TABLE 10-E

Growth in General Revenue of State and Local Governments, by Sources, Kentucky and the Average of the 50 States, Fiscal Years 1978-1985
(Index Numbers: 1978 = 100)

Revenue Sources		Fiscal Years							
		1978	1979	1980	1981	1982	1983	1984	1985
Total General Revenue	Kentucky	100	114	124	131	135	143	162	179
	50-State Average	100	109	121	134	144	154	172	189
Federal Aid	Kentucky	100	115	127	137	124	129	139	154
	50-State Average	100	108	119	130	125	129	139	153
General Revenue from Own Sources	Kentucky	100	113	123	129	139	149	170	189
	50-State Average	100	109	121	135	150	161	181	200
Non-tax Revenue	Kentucky	100	117	143	145	152	169	226	264
	50-State Average	100	119	144	168	195	213	238	269
Total Tax Revenue	Kentucky	100	112	117	125	135	142	154	166
	50-State Average	100	106	115	126	138	147	165	181
General Sales Tax (excludes selective)	Kentucky	100	113	114	119	129	132	142	154
	50-State Average	100	112	124	134	146	156	181	224
Income Taxes (Individual and Corporation)	Kentucky	100	116	125	136	143	152	163	176
	50-State Average	100	112	126	138	150	158	186	203
Property Taxes	Kentucky	100	109	118	123	130	141	153	161
	50-State Average	100	98	103	113	123	134	145	156
Motor Vehicle Fuel and License Taxes	Kentucky	100	104	100	96	106	113	121	123
	50-State Average	100	106	105	108	115	119	135	147
Severance Taxes	Kentucky	100	120	138	152	200	173	164	178
	50-State Average	100	116	167	256	314	297	291	289

Source: U.S. Department of Commerce, Bureau of the Census, *Governmental Finances*, various years. Kentucky data are through the Kentucky Economic Information System.

Note: Total General Revenue, less Federal Aid, equals General Revenue from Own Sources, which is divided into Non-tax Revenue (charges and miscellaneous) and Total Tax Revenue. Revenue other than General Revenue, such as from the Unemployment Insurance programs, is omitted, as are several low-yield tax types.

Kentucky's general sales tax revenue, lagging the nation by 70 percentage points; income tax revenue, with Kentucky 27 points behind the nation; and motor vehicle fuel and license tax revenue, at 24 points behind the nation.

Table 10-F from Table 10- E presents "relative" index numbers, wherein the Kentucky index numbers are expressed as percentages of the national index numbers. These relative index numbers provide a convenient way to compare revenue growth between Kentucky and the nation. Values over 100 indicate greater-than-average growth since 1978, and rising values indicate improvement even if below 100. Only a few cases of values above 100 are shown. Probably the most notable instance of decline for Kentucky between 1984 and 1985 is in revenue from general sales taxes, which declined by 9.7 percentage points relative to the nation. Declines also occurred in other tax types including: income taxes which declined by 0.9 points; property taxes which declined by 2.3 points; and motor vehicle taxes which declined by 5.9 points. Total taxes declined by 1.6 points. Some increases are shown: federal aid increased by 0.7 points, non-tax revenue increased by 3.1 points, and severance tax revenue increased by 5.2 points. For all sources over the entire period shown, the largest decline for Kentucky was in severance taxation, with a relative index value in 1985 of 38.4 percentage points below the 1978 value and 41.8 points below the peak value of 1979. Kentucky's slight relative improvement in severance taxation in 1985 is a bright spot. But overall, the picture of Kentucky taxation relative to the nation is one of general and continued decline in the period since 1978.

TABLE 10-F

Growth in General Revenue of State and Local Governments, Fiscal Years 1978-1985
(Kentucky Growth as a Percentage of U.S. Growth)
(Index Numbers: 1978 = 100)

	1978	1979	1980	1981	1982	1983	1984	1985
Total General Revenue	100.0%	104.6%	102.5%	97.8%	93.8%	92.9%	94.2%	94.7%
Federal Aid	100.0	106.5	106.7	105.4	99.2	100.0	100.0	100.7
General Revenue from Own Sources	100.0	103.7	101.7	95.6	92.7	92.5	93.9	94.5
Non-tax Revenue	100.0	98.3	99.3	86.3	77.9	79.3	95.0	98.1
Total Tax Revenue	100.0	105.7	101.7	99.2	97.8	96.6	93.3	91.7
General Sales Tax (excludes selective)	100.0	100.9	91.9	88.8	88.4	84.6	78.5	68.8
Income Taxes (Individual and Corporation)	100.0	103.6	99.2	98.6	95.3	96.2	87.6	86.7
Property Taxes	100.0	111.2	114.6	108.8	105.7	105.2	105.5	103.2
Motor Vehicle Fuel and License Taxes	100.0	98.1	95.2	88.9	92.2	95.0	89.6	83.7
Severance Taxes	100.0	103.4	82.6	59.4	63.7	58.2	56.4	61.6

Source: The data displayed in this table are the result of taking the values for Kentucky shown in Table 10-E and computing them as a percentage of the values for the U.S. shown in Table 10-E.

Kentucky's Tax Performance

Tables 10-G and 10-H compare Kentucky's tax performance with that of the 50-state average using a simplified national-average tax system methodology which is based on personal income as the common denominator. In last year's *Annual Economic Report*, similar comparisons were presented using results published by the U.S. Advisory Commission on Intergovernmental Relations (ACIR), based on its elaborate Representative Tax System method. For Kentucky, the results of that method did not differ sufficiently from results of the simplified, personal income method to justify use this year. The personal income method not only is simpler but gives more recent results.

Table 10-G gives the results and an explanation of the method for 1985, and Table 10-H compares results for the years 1978 through 1985. The comparisons are between *actual* Kentucky tax yield (in total and by tax types) and *potential* yield. The potential yields are the Kentucky tax revenues that would be obtained if state and local tax yields were the same percentage of total personal income in Kentucky as is true for the total of all state and local governments in the nation. Total personal income is not always a suitable common denominator for computing tax potential, nor is it equally suitable for all tax types. Nevertheless, the personal-income-based method is convenient and yields results not much different from the results of the ACIR's much more elaborate Representative Tax System method. For Kentucky, the differences between the two methods are large and important only for severance taxation.

Table 10-G shows that in 1985, Kentucky's actual yield was only 90.4 percent of the 50-state average-effort yield (Kentucky's potential yield). In dollars, the deficiency was $410.6 million, suggesting that Kentucky's total tax yield could have been $410.6 million larger if it had been at the 50-state average relative to total personal income. Among tax types, Kentucky was above its potential yield in income taxes ($104.3 million or 9.6 percent above potential), motor vehicle fuel and license taxes ($43 million or 16.7 percent), and severance taxes ($140.2 million or 159.5 percent). But more than offsetting these above-average amounts were the deficiencies in property taxation ($585.0 million or 46.3 percent below potential) and in general sales taxation ($206.3 million or 20.1 percent). Kentucky's below-average use of general sales tax, and above-average use of income taxes, is partly explained by Kentucky local governments using income taxes (local occupational license or payroll taxes) instead of local sales taxes, whereas the opposite combination is popular in many other states.

Table 10-H compares the eight years 1978 through 1985 according to the method described above. Actual tax yields are shown as percentages of potential yields. Note that these totals are identical to the taxes-to-income values in Table 10-A. The general pattern of the relative importance of tax types for Kentucky has remained essentially the same. However, performance relative to potential yield has declined over the years in many cases, especially for general sales taxes but also for income taxes, motor vehicle taxes, and total taxes. These declines are par-

TABLE 10-G

Actual and Potential Yield of State and Local Taxes, Kentucky and the 50 States, Fiscal Year 1985

Tax Type	Kentucky: Total State and Local Tax Revenue (Millions of Dollars)				50 States: Total State and Local Tax Revenue (Millions of Dollars)	
	Actual Yield	Potential Yield[a]	Potential Less Actual	Actual as % of Potential Yield	Actual Yield	Tax Type as % of Total
General Sales (excludes selective)	$ 820.5	$1,026.8	$206.3	79.9%	$ 84,292	24.1%
Income: Individual and Corporation	1,191.6	1,087.3	(104.3)	109.6	89,255	25.5
Property	678.9	1,263.9	585.0	53.7	103,757	29.7
Motor Vehicle Fuel and License	301.3	258.3	(43.0)	116.7	21,202	6.1
Severance	228.0	87.8	(140.2)	259.5	7,211	2.1
All Other Taxes[b]	630.1	536.9	(93.2)	117.4	44,077	12.6
Total General Tax Revenue	3,850.4	4,261.0	410.6	90.4	349,794	100.0

Source: U. S. Department of Commerce, Bureau of Economic Analysis, and Bureau of the Census, *Governmental Finances*, 1984-85; through the Kentucky Economic Information System.

Notes

[a]Potential tax yield, sometimes referred to as average-effort tax yield, is the total Kentucky tax revenue that would be produced *if* total tax yield were the same percentage of total personal income in Kentucky as is true for the total of all state and local governments in the nation. Total state and local tax yield in the nation in fiscal year 1985 was $349,794.0 million, which was 10.566 percent of total U.S. personal income of $3,310,545 million. Kentucky personal income of $40,327 million, multiplied by 10.566 percent, gives potential yield of $4,261.0 million for fiscal year 1985. Potential Kentucky yield for each tax type is computed by distributing the total potential yield among the various tax types in the same percentages shown for the total tax yield of state and local governments in the 50 states. For example, property tax yield was 29.662 percent of total tax yield nationally. The Kentucky potential yield of $4,261.0 million, multiplied by 29.662 percent, gives $1,263.9 million as the potential yield for property tax in Kentucky. Actual property tax yield in Kentucky was only $678.9 million in 1985, suggesting unused property tax potential of $585.0 million. Also, actual property tax yield was only 53.7 percent of potential yield in Kentucky in that year. Because some Kentucky tax types have actual yields larger than potential yields, the total of unused tax potential ($410.6 million) is the sum of the positive and negative amounts for the various tax types. Total unused potential yield is also the total potential yield less the actual yield ($4,261.0 − $3,850.4 = $410.6 million).

[b]Main components of the "All Other Taxes" category are such selective sales and license taxes as on cigarettes, alcoholic beverages, insurance premiums, and public utility services.

TABLE 10-H

Actual Yield of State and Local Taxes as a Percentage of Potential Tax Yield, Kentucky, Fiscal Years 1978-1985

General Revenue Tax Type	1978	1979	1980	1981	1982	1983	1984	1985
General Sales Tax (excludes selective)	97.2%	97.6%	91.1%	87.7%	87.8%	86.9%	80.6%	79.9%
Income Taxes: Individual & Corporate	116.8	120.9	117.4	117.1	114.8	119.0	108.4	109.6
Property Tax	48.2	53.7	55.7	53.6	52.3	53.6	53.7	53.7
Motor Vehicle Fuel & License Taxes	129.2	126.9	124.1	117.8	122.2	130.0	123.3	116.7
Severance Tax	390.1	403.6	327.2	235.8	255.6	241.0	233.5	259.5
All Other Taxes	95.2	99.1	90.3	94.9	96.8	107.5	108.8	117.4
Total General Tax Revenue	90.7	96.0	93.3	91.2	91.6	93.3	89.2	90.4

Source: U.S. Department of Commerce, Bureau of the Census, *Governmental Finances*, various years, through the Kentucky Economic Information System.

ticularly apparent when comparing 1984 and 1985 with 1983. The property tax has been relatively stable since 1979, although at the very low percentage of potential yield that is characteristic of this type of taxation in Kentucky.

Looking generally at taxation in Kentucky, the low level of yield is due mainly to two characteristics. One is Kentucky's below-average level of per capita personal income. The second is the failure of Kentucky to use its tax potential to an average degree. These two deficiencies are illustrated in Table 10-H. The potential tax yield is low because: (a) personal income is low; and (b) the degrees of use of that already low potential are shown to average only around 90 to 92 percent. More specifically, Kentucky's tax potential in 1985 was only 78.1 percent of the national average because its per capita pesonal income was only 78.1 percent of the national average (Table 3-A). But use of Kentucky's tax potential was only 90.4 percent (Tables 10-A, 10-G, and 10-H). Multiplying 78.1 by 90.4 gives 70.6. Consequently, taxes per capita in Kentucky in 1985 were 70.6 percent of the national average (Table 10-A). Whereas a state with per capita personal income equal to the national average and using 100 percent of its tax potential will collect $100 of tax revenue, Kentucky will collect only $70.60.

FIGURE 10-A

Growth in Personal Income and Total Tax Revenue of State and Local Governments, Kentucky and the United States, Fiscal Years 1980-1985
(Index Numbers: 1980 = 100)

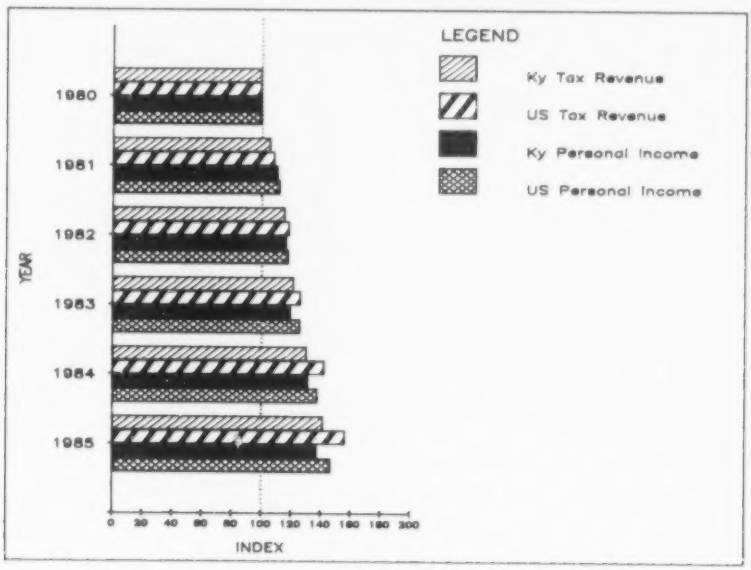


FIGURE 10-B

Growth in Total General Revenue, General Sales and Severance Taxes, State and Local Governments, Fiscal Years 1978-1985
(Kentucky Growth as a Percentage of U.S. Growth)

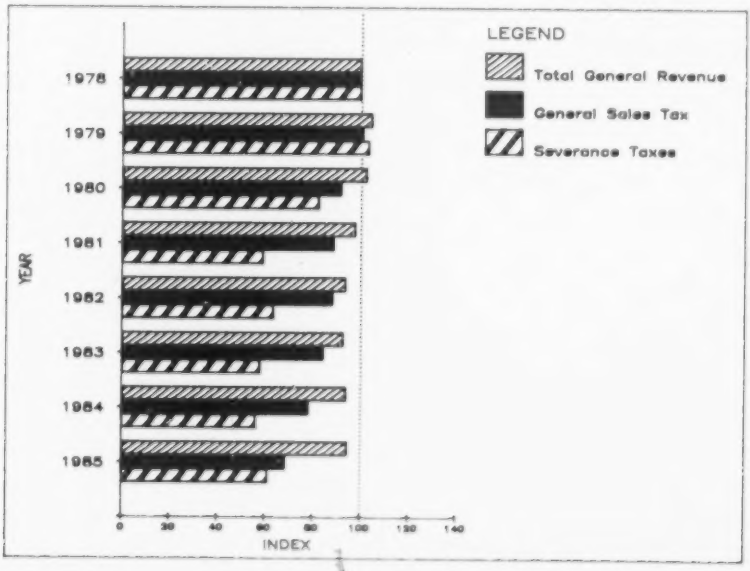


FIGURE 10-C

Actual Yield as a Percent of Potential Yield, State and Local Taxes, Kentucky, Fiscal Year 1985

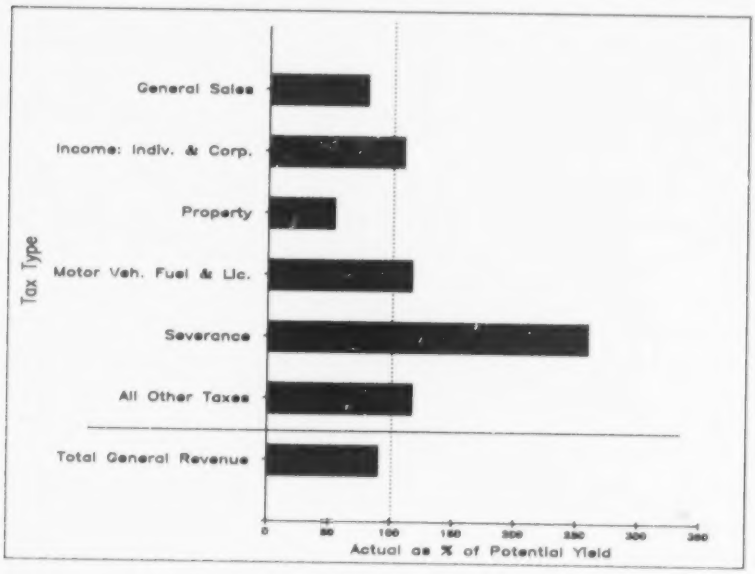
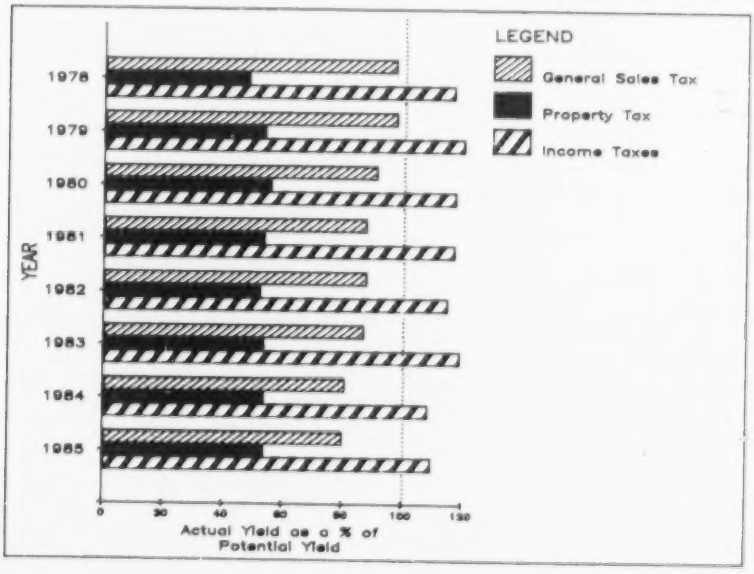


FIGURE 10-D

Actual Yield as a Percent of Potential Yield, Selected State and Local Taxes, Kentucky, Fiscal Years 1978-1985



11. Expenditures of State and Local Governments

Expenditures of Kentucky state and local governments are compared with those of the fifty states in five tables in this section. All comparisons are in terms of per capita amounts, and in nearly all cases the Kentucky amounts are expressed as percentages of national amounts. The period covered is generally from 1960 through 1985, with only selected years shown in some cases. Table 11-A compares expenditures with tax revenue to emphasize that expenditures are financed not only by state and local taxation but also by non-tax revenue (charges and miscellaneous), federal aid, and the proceeds of bond issues. Table 11-B compares Kentucky and the fifty states according to per capita expenditures. Table 11-C compares Kentucky and the fifty states according to per capita expenditures for particular types of services, to suggest the differences in level of support among service types in Kentucky and the nation. Expenditure types found to be unusually high in Kentucky, relative to the national average, are selected for further examination in Table 11-D. Table 11-E compares Kentucky and the fifty states according to expenditures for education by main categories.

Some explanation is necessary to avoid confusion in interpreting expenditure data published by the U.S. Bureau of the Census. First, expenditures include the proceeds of bond issues in the year spent, and the interest on outstanding debt in the year interest is paid. Disbursements of money to retire debt principal are not counted as expenditures because to do so would count the principal amount twice—once when originally spent and again when retired. Second, some state and local government expenditures are for services not considered to be of the general government type. These are excluded when total expenditures are narrowed to include only "general" expenditures. Also, state governments disburse money that is spent by local governments. If these state disbursements are counted as state expenditures, they will be counted as expenditures again when spent by the local governments. This double counting is avoided in the measure of "direct" expenditures because intergovernmental aid from state to local governments is excluded in the measure of state government expenditures. The data used in this section are for direct general expenditures of state and local governments combined.

Per Capita Expenditures

Table 11-A compares per capita expenditures with per capita tax revenue, for Kentucky and the fifty states, for 1960, 1965, 1970, 1975, 1980, and 1985. Dollar amounts are shown, but the analysis is made more meaningful when the ratios of expenditures to taxes are examined. Expenditures exceed tax revenue in all cases because of federal aid to state and local governments and proceeds of bond issues. Of interest is how Kentucky differs from the national average and whether these differences have changed over the years shown. All of the expenditure-to-tax ratios are higher for Kentucky than the nation, as would be expected because Kentucky is above average in importance of federal aid. Varia-

tions among years most likely are reflections of bond issues, which fluctuate more for a single state because differences among individual states tend to offset one another in the national totals.

TABLE 11-A

Per Capita Direct General Expenditures and the Ratio of Expenditures to Taxes State and Local Governments, Kentucky and the Average of the 50 States Selected Fiscal Years, 1960-1985

	Kentucky			50-State Average		
Fiscal Year	Expenditures Per Capita	Taxes Per Capita	Expenditures/ Taxes	Expenditures Per Capita	Taxes Per Capita	Expenditures/ Taxes
1960	$ 199	$119	1.67	$ 288	$ 201	1.44
1965	311	177	1.76	385	265	1.45
1970	532	298	1.79	644	426	1.51
1975	820	487	1.69	1065	657	1.62
1980	1475	739	2.00	1616	983	1.64
1985	1792	1465	1.73	2313	1465	1.59

Source: Department of Commerce, Bureau of the Census, *Governmental Finance*, various years. Kentucky data are through the Kentucky Economic Information System.

Table 11-B compares Kentucky and the fifty states according to per capita amounts of direct general expenditures for 1960, 1965, 1970, 1975, and 1980 through 1985. Dollar amounts are shown, but the analysis is made more meaningful when Kentucky values are examined as percentages of national values. Probably the most striking feature in these data is the large fluctuations among years. In the six years from 1980 to 1985, Kentucky direct general expenditure as a percent of the national average varied from 91.3 percent in 1980 to 77.5 percent in 1985. These fluctuations are mainly the result of debt issues, although some influence comes from changes in tax and non-tax revenue and federal aid. Despite these fluctuations, the period 1980 through 1985 appears to be one of relative decline for Kentucky.

TABLE 11-B

Per Capita Direct General Expenditures—State and Local Governments, Kentucky and the Average of the 50 States, Selected Fiscal Years 1960-1985

Fiscal Year	Expenditures Per Capita		Kentucky as a Percent of 50-State Average
	Kentucky	50-State Average	
	(Dollars)		(Percent)
1960	$ 198.6	$ 288.3	68.9%
1965	311.4	385.3	80.8
1970	532.2	644.4	82.6
1975	820.0	1065.0	77.0
1980	1475.1	1616.4	91.3
1981	1488.8	1766.2	84.3
1982	1472.7	1868.7	78.8
1983	1554.0	1983.3	78.4
1984	1718.4	2128.1	80.7
1985	1791.6	2313.0	77.5

Source: U.S. Department of Commerce, Bureau of the Census, *Governmental Finances*, various years. Kentucky data are through the Kentucky Economic Information System.

Categories of Expenditure

Particular categories of expenditures are examined in Table 11-C to identify expenditure categories that are unusually high in Kentucky, compared with Kentucky's generally below-average level of per capita expenditures. (Various expenditure categories are defined in the Glossary at the end of this report.) Only three years are included—1975, 1980, and 1985. Because expenditures can fluctuate widely from year to year, selection of a particular year can show unusually high or low expenditures in particular categories. This seems to be the case for highway expenditures in Kentucky in 1980. But by selecting three years over an eleven year period, the identification of unusual differences is meaningful.

In analyzing Table 11-C, two benchmarks are used for identifying categories with high or low values—Kentucky's total direct expenditure as a percent of the nation's (77 percent in 1975 and 1985, and 91.3 percent in 1980), and the national average which is 100 percent in each year. Against these benchmarks, 1980 appears to be unusual mainly because of the large debt-financed highway expenditures that year. In the more normal years of 1975 and 1985, five Kentucky expenditure categories exceeded the state's average of 77 percent—total education, institutions of higher education, other education, highways, and interest on general debt. In addition, expenditure on other education and highways exceeded the national average of 100 percent in both years. Because of their generally above-average levels of expenditures in Kentucky, the highway, interest, and education categories are selected for further analysis.

TABLE 11-C

Per Capita Direct General Expenditures, by Specific Services—State and Local Governments, Kentucky and the Average of the 50 States
Fiscal Years 1975, 1980, and 1985

Type of Service	1975			1980			1985		
	Kentucky	United States	Kentucky as % of U.S.	Kentucky	United States	Kentucky as % of U.S.	Kentucky	United States	Kentucky as % of U.S.
	(Dollars Per Capita)		(Percent)	(Dollars Per Capita)		(Percent)	(Dollars Per Capita)		(Percent)
Education, Total	$326.7	$ 407.8	80.1%	$ 505.8	$ 586.2	86.3%	$ 647.5	$ 807.1	80.1%
Local Schools	199.1	285.4	69.8	313.7	409.0	76.7	395.5	552.8	69.8
Institutions of Higher Education	99.3	100.7	98.6	149.0	149.3	99.8	194.7	219.1	98.6
Other	28.2	21.7	130.1	42.9	28.0	153.4	57.3	35.1	130.1
Public Welfare	95.6	126.2	75.8	176.9	200.4	88.2	235.9	291.4	75.8
Health and Hospitals	50.5	87.5	57.7	91.2	141.6	64.4	122.3	208.2	57.7
Highway Transportation	118.3	104.6	113.2	267.9	146.6	182.7	193.3	188.6	113.2
Police and Fire	37.1	55.0	67.4	55.8	84.5	66.0	72.8	125.1	67.4
Corrections	n/a	n/a	n/a	23.7	28.4	83.7	31.9	53.8	59.4
Resources, Parks, Recreation	n/a	n/a	n/a	47.5	52.9	89.7	64.4	73.4	71.4
Sewerage	17.4	24.4	71.4	27.9	43.5	64.0	26.7	51.0	52.4
Housing and Urban Renewal	n/a	n/a	n/a	23.0	26.7	86.1	33.7	43.4	77.5
Financial Administration and General Control	22.1	40.1	55.1	47.6	67.8	70.2	77.0	103.7	55.1
Interest on General Debt	40.2	40.8	98.7	97.8	65.0	150.7	151.3	194.4	98.7
All Other	112.2	178.6	62.8	110.2	172.7	63.8	140.8	173.0	81.4
Total Direct General Expenditure	$820.0	$1065.0	77.0%	$1475.1	$1616.4	91.3%	$1797.6	$231.3	77.0%

Source: U.S. Department of Commerce, Bureau of the Census, *Governmental Finances*, various years. Kentucky data are through the Kentucky Economic Information System.

Note: For Kentucky, the Other Education subcategory includes funds expended on vocational education. For the standard definitions of the categories and subcategories, please consult the Glossary.

Table 11-D compares Kentucky and the fifty states according to per capita expenditures for three categories—institutions of higher education, highways, and interest on general debt—for each year in the period 1961 through 1985. Kentucky amounts are expressed as percentages of the national averages. Except for 1961, when Kentucky was below average in all three categories, the Kentucky values are above 100 percent in all of the 24 years shown (1962 through 1985) for highways, in most of the years (21 out of 24) for interest on general debt, and in half of the years for institutions of higher education. Since 1980, Kentucky's relative expenditure levels have been noticeably lower for all three categories. However, as noted previously, 1980 was an unusual year; thus comparison is made between 1981 and 1985. Kentucky's relative expenditures declined between 1981 and 1985 by 6 percentage points for higher education, 44 points for highways, and 11 points for interest on general debt. The 1985 expenditures for highways were especially low.

Looking more broadly at the 25-year period, Kentucky's expenditures on higher education, highways, and interest on general debt have declined relative to the national averages, with the largest decline in highways. These declines are especially pronounced because expenditure levels in earlier years for these groups were unusually high relative to other groups. Previous above-average levels of expenditure in Kentucky for highways and higher education were due to efforts to more nearly approach national standards in these two areas. Because much capital expenditure was involved, and because such expenditure is almost always debt financed, it is normal that interest expenditures also were high. The relative decline in these categories in recent years could possibly be interpreted as normal insofar as the catching-up period is over. On the other hand, the large capital investments in highways and higher education require high annual expenditure levels for maintenance, operation, and administration. Regardless of the reasons, the expenditure data examined in this section clearly show that Kentucky has been far below the national average in total expenditures, and has been unusually high in the higher education, highways and interest categories, although expenditure has declined in these categories in the 1980s.

TABLE 11-D

Per Capita Direct General Expenditures, Selected Services of Kentucky State and Local Governments, Fiscal Years 1961-1985

Fiscal Year	Amounts as Percents of 50-State Averages		
	Institutions of Higher Education	Highway Transportation	Interest on General Debt
1961	83%	87%	66%
1962	113	122	99
1963	110	145	109
1964	106	119	108
1965	92	106	111
1966	97	109	107
1967	113	122	120
1968	103	138	139
1969	113	139	128
1970	114	118	124
1971	94	125	132
1972	95	140	125
1973	100	139	110
1974	96	118	100
1975	99	113	99
1976	101	118	88
1977	94	122	93
1978	95	142	102
1979	104	177	126
1980	100	183	151
1981	95	147	122
1982	89	119	129
1983	89	121	116
1984	93	125	117
1985	89	103	111

Source: U.S. Department of Commerce, Bureau of the Census, *Governmental Finances*, various years, through the Kentucky Economic Information System.

Expenditure on Education

Education is the largest expenditure category as a percentage of the total for both state and local governments and therefore is selected for more detailed examination. Table 11-E compares Kentucky with the fifty states in several categories of educational expenditure for the 25-year period 1961 through 1985. Kentucky and national per capita amounts are shown in dollars, and the Kentucky values also are expressed as percentages of the national values. The four educational categories are: total education, local schools, institutions of higher education, and other education. The most striking differences shown are Kentucky's low expenditure levels for total education and local schools, and its much higher expenditure levels for higher education and other education. Because the dollar amounts are relatively small for the other education category, interest is focused on the very large difference in expenditure levels for local schools compared with institutions of higher education.

In 1979, Kentucky spent $470.9 per capita for total education, $291.9 per capita for local schools, and $139.5 per capita for higher education. Kentucky's local school expenditure level was 78.6 percent of the 50-state average while its higher education level was 104.3 percent, a difference of 25.7 percentage points. In later years, the differences were smaller; 23.1 points in 1980; 21.3 points in 1981; 19.7 points in 1982; 13 points in 1983; 20.3 points in 1984; and 17.4 points in 1985. The data in Table 11-E show Kentucky to be much more supportive of higher education than of local schools, compared with the national averages over the entire 25 year period. But the degree of difference declined slightly in the 1980s.

Looking at total education expenditure per capita, Kentucky's positions relative to the national average reached 88.6 percent in 1979, the highest value since the peak years of 1969 and 1970. But Kentucky's relative levels of support for total education have generally declined since 1979. Much the same is shown for local schools. It is noteworthy that the 1983 relative level of expenditures for local schools was exceeded only in 1979 and 1980. But the 1985 value for local schools (71.5 percent of the national average) was the lowest since the 68.9 percent value for 1982. Despite these year-to-year fluctuations, Kentucky's expenditure for local schools is generally about 70 percent of the national average. Stated another way, Kentucky's per capita state and local taxation, as a percentage of the fifty state average, is generally about 70 percent, the same relative position Kentucky occupies in support of local schools. In 1985, the two relative values were nearly identical.

TABLE 11-E

Per Capita Direct General Expenditures by Types of Education Expenditures, State and Local Governments
Kentucky and the Average of the 50 States, Fiscal Years 1961-1985

Fiscal Year	Expenditures Per Capita											
	Total Education			Local Schools			Institutions of Higher Education			Other Education		
	Kentucky (Dollars Per Capita)	50-State Average	Kentucky/ 50-State Average	Kentucky (Dollars Per Capita)	50-State Average	Kentucky/ 50-State Average	Kentucky (Dollars Per Capita)	50-State Average	Kentucky/ 50-State Average	Kentucky (Dollars Per Capita)	50-State Average	Kentucky/ 50-State Average
1961	$ 82.8	$112.5	73.6%	$ 64.5	$ 90.8	71.1%	$ 16.2	$ 19.5	83.2%	$ 2.1	$ 2.2	95.3%
1962	95.9	118.0	81.3	69.2	94.0	73.6	24.6	21.7	113.2	2.2	2.3	93.2
1963	102.9	127.4	80.7	72.4	99.8	72.6	27.6	25.0	110.4	2.9	2.7	107.6
1964	104.5	138.9	75.3	70.0	106.8	65.5	30.6	28.9	105.8	4.0	3.2	125.4
1965	111.2	147.6	75.3	77.1	113.5	67.9	27.8	30.3	91.7	6.2	3.8	164.4
1966	131.3	170.3	77.1	85.2	128.4	66.4	35.9	36.9	97.3	10.2	5.1	202.3
1967	161.0	193.7	83.1	101.2	142.2	71.1	50.3	44.6	112.6	9.6	6.9	139.0
1968	169.0	206.5	81.8	104.6	147.0	71.1	53.0	51.3	103.3	11.5	8.2	139.5
1969	202.8	234.7	86.4	126.9	167.7	75.7	65.0	57.4	113.2	11.3	9.6	117.7
1970	221.8	258.7	85.7	137.9	183.8	75.0	72.1	63.4	113.8	11.8	11.4	103.0
1971	232.7	287.3	81.0	150.7	201.9	74.6	66.9	71.5	93.6	15.0	13.8	108.5
1972	238.0	310.1	77.0	150.8	218.2	69.1	72.7	76.2	95.4	15.1	15.7	96.2
1973	259.0	329.2	78.7	160.7	230.8	69.6	81.3	81.5	99.8	17.1	16.8	101.4
1974	277.7	355.5	78.1	174.6	248.7	70.2	84.7	88.5	95.7	18.4	18.2	100.9
1975	326.7	407.8	80.1	199.1	285.4	69.8	99.3	100.7	98.6	28.2	21.7	130.1
1976	359.2	446.9	80.4	213.1	311.1	68.5	112.4	111.7	100.6	33.7	24.1	139.8
1977	380.4	467.8	81.3	233.0	324.6	71.8	111.8	119.2	93.8	35.6	23.9	148.6
1978	393.3	498.7	78.9	235.2	345.4	68.1	122.0	127.8	95.4	36.2	25.5	141.9
1979	470.7	531.9	88.5	291.7	371.3	78.6	139.5	133.9	104.2	39.5	26.7	147.8
1980	505.8	586.2	86.3	313.7	408.9	76.7	149.0	149.3	99.8	42.9	28.0	153.4
1981	522.7	634.8	82.3	321.2	437.8	73.4	157.2	166.0	94.7	44.3	31.1	142.7
1982	515.2	666.3	77.3	315.1	457.3	68.9	158.6	179.0	88.6	41.5	30.0	138.4
1983	579.1	699.5	82.8	368.5	482.1	76.4	167.3	187.0	89.4	43.3	30.3	142.8
1984	609.2	744.7	81.8	371.9	511.2	72.7	187.5	201.3	93.1	49.9	32.1	155.2
1985	647.5	807.1	80.2	395.5	552.8	71.5	194.7	219.1	88.9	57.3	35.1	163.1

Source: U.S. Department of Commerce, Bureau of the Census, *Governmental Finances*, various years. Kentucky data are through the Kentucky Economic Information System.

FIGURE 11-A

Per Capita Direct General Expenditure, State and Local Governments, Kentucky as a Percent of the 50-State Average, Selected Fiscal Years 1960-1985

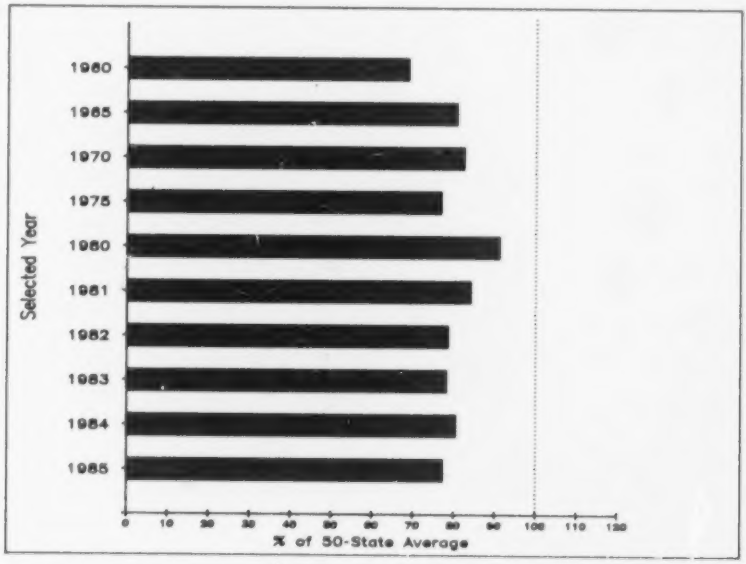


FIGURE 11-B

Per Capita Direct General Expenditures, by Specific Services—State and Local Governments, Kentucky as a Percent of the United States, Fiscal Year 1985

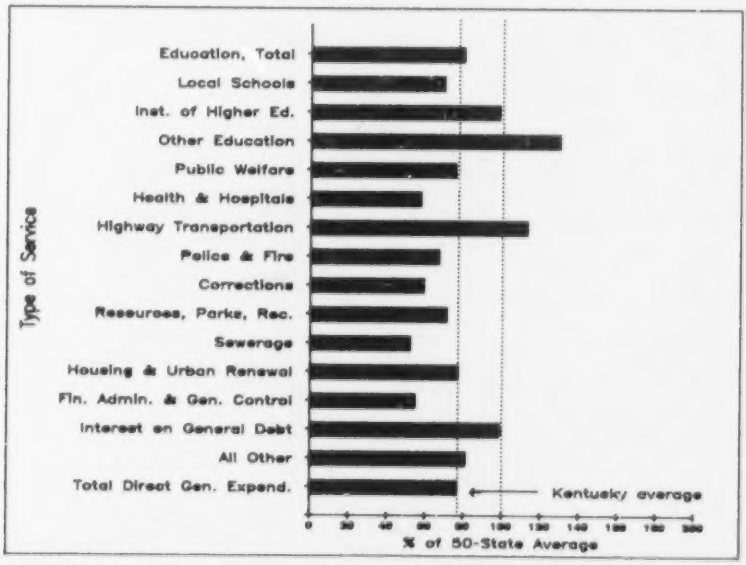
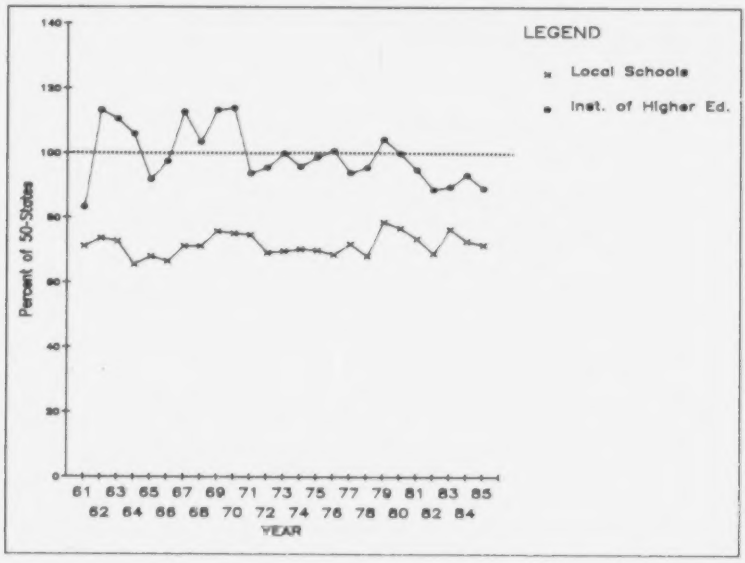


FIGURE 11-C

Per Capita Direct General Expenditures for Local Schools and Institutions of Higher Education, State and Local Governments, Kentucky as a Percent of the 50 States, Fiscal Years 1961-1985



12. Federal Aid to State and Local Governments

The federal government provides monetary aid to state and local governments (intergovernmental aid) and also to individuals and businesses (included in total transfer payments). Federal aid was 22.5 percent of total general revenue in Kentucky in 1985 and 17.8 percent for the fifty states. As shown in Table 3-D, total transfer payments constituted 17.6 percent of total personal income in Kentucky in 1985 and 14.7 percent for the nation. This section mainly deals with federal aid to state and local governments, but it also examines some data on governmental transfer payments to individuals and businesses. The main reason that both federal aid and transfer payments are included in this section is that these two federal payment programs often supplement each other. Their interrelationship is best explained by an example.

Two families, each with only a mother and two children, could be receiving similar monthly incomes from governmental programs as follows: Family A consists of a widow receiving federal Social Security survivors' benefits for her two dependent children, and Family B consists of a single mother receiving Aid to Families with Dependent Children (AFDC) benefits for her two dependent children. The income received by both families is defined as governmental transfer payments to individuals, and these transfer payments are financed wholly or partly by federal revenue. For Family A, the benefit check is received directly from the federal government and is 100 percent federal money; but this federal money is not a part of federal aid because the funds flow directly from the federal government to the family, omitting the state government. For Family B, the federal money flows first to state government, as federal aid, and then from the state government to Family B. Before being received by Family B, the federal funds are supplemented with some of the state government's own-source revenue. It can be argued that state governments might feel compelled to spend larger amounts of own-source revenue for public welfare if not for the several federal programs that give income support directly to individuals.

Both governmental transfer payments to persons and federal aid can change the distribution of personal income among individuals and also among states. The cause of the income redistribution is most clearly explained by an example. Suppose that the federal government collects $2 in tax revenue per person on the average in New York state for each $1 of tax revenue collected per person in Kentucky. The resulting $3 of revenue is spent for federal aid or for transfer payments to individuals to dispense $1.50 of benefits per person in each state. That is, New York would produce $2 of federal revenue but receive only $1.50, whereas Kentucky would receive $1.50 but produce only $1. In effect, 50¢ of "extra" tax revenue collected per person in New York state would be transferred to Kentucky. Because both federal aid and transfer payments can have income redistribution effects among the states, they both are included in this section.

Per Capita Federal Aid

Table 12-A compares Kentucky and the fifty states according to per capita amounts of federal aid, for the 26 year period 1960 through 1985. Dollar amounts are shown, but comparison is made more meaningful when Kentucky values are expressed as percentages of the national values. Of interest is whether Kentucky occupies a lower or higher position among the fifty states in receipt of federal aid as compared to its position in production of own-source general revenue. As shown in Table 12-B, in 1985 Kentucky received federal aid in an amount equal to 29.1 percent of its own-source general revenue, which was higher than the national average amount of 21.6 percent. But in Table 12-A, Kentucky is shown to be only 99.1 percent of the national average in *per capita* federal aid in 1985. This apparent inconsistency is explained by Kentucky's low relative position among the fifty states in most of the own source revenue measures. For example, Kentucky's tax revenue per capita was about 70 percent of the national average in 1985, (Table 10-A) while per capita federal aid was 99.1 percent of the national average. In this sense, Kentucky gets a boost in spendable revenue because of federal aid.

In the period 1972 and later, Kentucky's per capita federal aid was around 100 percent of the national average, although with some variation. Prior to 1972, Kentucky's relative share was considerably larger. This stability of Kentucky's relative share in 1972 and later years is perhaps a bright spot in the sense that Kentucky has been holding its own during a period of generally shrinking importance of federal aid nationally. On the other hand, no clear answer can be given for the sharp drop in importance of federal aid to Kentucky in the early seventies. Part of the reason could be Kentucky's economic improvement relative to the nation, which peaked in 1978 and later declined. This relative improvement perhaps allowed Kentucky to claim less federal aid because of its reduced need. When Kentucky's relative economic performance declined after 1978, the shrinking importance of federal aid nationally prevented Kentucky from regaining its traditional above-average position in receipt of federal aid.

Own-Source Revenue

Table 12-B compares Kentucky and the fifty states in federal aid and own-source general revenue, for the 26 year period 1960 through 1985. The Kentucky and national percentage series are compared using the Kentucky values as percentages of the national values. In 1985, Kentucky received 135 percent of the national average amount; that is, federal aid was 35 percent more important in Kentucky than in the nation, relative to own-source general revenue. But Kentucky's above-average position changed sharply in 1972, dropping from 174 percent of the national average in 1971 to 138 percent in 1972. As described above, Kentucky maintained this lower relative position in the following years and has yet to regain its former, much higher relative position.

TABLE 12-A

Federal Aid to State and Local Governments Per Capita, Kentucky and the Average of the 50 States, Fiscal Years 1960-1985

Fiscal Year	Dollars per Capita		Kentucky as a Percent of 50-State Average
	50-State Average	Kentucky	
1960	$ 38.8	$ 45.5	117.4%
1961	39.0	40.4	103.6
1962	42.3	48.0	113.4
1963	46.3	53.8	116.2
1964	52.3	65.4	124.9
1965	57.0	67.8	118.9
1966	67.1	80.6	120.0
1967	78.6	104.5	133.0
1968	86.2	110.8	128.6
1969	95.1	126.9	133.4
1970	107.2	115.4	107.6
1971	126.4	160.8	127.2
1972	149.3	147.4	98.7
1973	185.7	188.3	101.4
1974	196.1	203.3	103.7
1975	218.4	224.4	102.8
1976	255.5	254.4	99.6
1977	284.7	272.3	95.6
1978	313.3	295.4	94.3
1979	334.7	337.8	100.9
1980	365.4	368.3	100.8
1981	393.2	396.7	100.9
1982	374.8	359.4	95.9
1983	384.1	369.5	96.2
1984	410.4	397.6	96.9
1985	444.8	440.9	99.1

Source: U.S. Department of Commerce, Bureau of the Census, *Governmental Finances*, various years. Kentucky data are through the Kentucky Economic Information System. Population data are directly from Bureau of the Census.

TABLE 12-B

Federal Aid in Relation to Total Own Source General Revenue State and Local Governments, Kentucky and the Average of the 50 States, Fiscal Years 1960-1985

Fiscal Year	Federal Aid as a Percent of Own Source General Revenue		
	50-State Average	Kentucky	Kentucky/ 50-State Average
1960	16.0%	30.9%	193
1961	15.2	22.6	149
1962	15.6	25.4	163
1963	16.1	27.0	168
1964	17.1	31.2	182
1965	17.5	30.2	173
1966	18.8	31.9	170
1967	20.4	36.5	179
1968	20.4	36.3	178
1969	20.1	34.7	173
1970	20.1	29.6	147
1971	22.0	38.2	174
1972	23.1	32.1	138
1973	26.0	36.1	139
1974	25.2	35.1	139
1975	26.0	34.5	133
1976	27.7	36.4	131
1977	28.0	36.2	129
1978	28.2	35.6	126
1979	28.0	36.2	129
1980	27.7	36.7	132
1981	27.1	37.6	139
1982	23.5	31.8	135
1983	22.7	30.8	136
1984	21.8	29.0	133
1985	21.6	29.1	135

Source: U.S. Department of Commerce, Bureau of the Census, *Governmental Finances*, various years; Kentucky data are through the Kentucky Economic Information System.

Federal Aid Programs

Data are available to show the distribution of federal aid among major program areas. Table 12-C presents only data for Kentucky and shows the percentage distribution of federal aid among four categories in the eight-year period 1978 through 1985. Total federal aid is shown in dollar amounts, and the failure of these dollar values to show much increase in the 1980s suggests the reduced relative importance of federal aid. The distributions among major program areas are shown as percentages of total amounts and therefore must add to 100 percent in each year. Of interest are relative changes among the four groups. Federal aid for education did not change much as a percentage of total federal aid over the period 1978 through 1983, but dropped sharply after 1983. The "other" category has been relatively stable over the years shown, but increased since 1983. The main changes among percentage shares are the declining importance of general revenue sharing, the increased share for public welfare, and the decline since 1982 in aid to education.

TABLE 12-C

Federal Aid to Kentucky State and Local Governments by Specific Expenditure Programs, Fiscal Years 1978-1985

Fiscal Year	Federal Aid to Kentucky (Millions of Dollars)	Federal Aid by Specific Expenditure Programs as Percent of Total Federal Aid			
		Public Welfare	Education	General Revenue Sharing	Other
1978	$1066.6	24.9%	19.0%	10.5%	45.5%
1979	1230.9	22.6	17.4	9.1	50.9
1980	1349.8	29.6	18.0	8.2	44.2
1981	1458.1	31.8	18.4	6.4	43.4
1982	1327.5	34.4	19.0	5.7	41.0
1983	1372.3	34.9	18.7	5.5	40.8
1984	1479.0	35.3	17.2	5.1	42.3
1985	1642.7	37.7	15.4	n/a	46.9

Source: U.S. Department of Commerce, Bureau of the Census, *Governmental Finances*, various years; through the Kentucky Economic Information System.

Note: Specific Expenditure Programs are defined in the Glossary. The Other category above includes Highways, Health and Hospitals, Housing and Urban Renewal, etc.

Governmental Transfer Payments

Table 12-D concerns *governmental* transfer payments to individuals while *total* transfer payments are the subject of Table 12-E. Total transfer payments are a broader concept than governmental transfer payments to individuals. The data in Table 12-D on governmental transfer payments to individuals reflect payments *only* from government and *only* to individuals. Although all three levels of government are included (the available data do not allow exclusion of state and local governments), most of the transfer payments in Table 12-D are from the federal government.

Governmental transfer payments to individuals are shown in Table 12-D according to five major groups: medical payments and retirement; unemployment insurance; education; income maintenance; and veterans benefits. A major change from data presented in last year's *Annual Economic Report* is that military retirement benefits in this year's report have been counted as retirement, instead of veterans benefits. Of interest in Table 12-D are differences in the importance of the five categories, how the distribution among categories has changed over the years, and how the Kentucky and national values compare as to levels and changes over the 17 year period 1969 through 1985.

The largest share of government transfer payments to individuals is medical payments and retirement benefits. This share has grown over the years for both Kentucky and the nation. While the Kentucky values are consistently smaller than the national values, the degree of difference has remained fairly constant over the years shown. Unemployment insurance benefits vary in relative importance not only over the years but also between Kentucky and the nation. The cause of these variations and differences is the level of unemployment. Generally, decreased importance of unemployment benefits suggests a decline in unemployment. In addition, a smaller unemployment insurance benefit percentage for Kentucky than the nation suggests lower unemployment in Kentucky. As described in Section 2, Kentucky's unemployment rate generally was below the national rate in the period 1970 through 1979, but above the national rate in 1980 and later years. While these differences and changes are reflected in the Table 12-D data, long-term unemployment can make non-workers ineligible for continued benefits. This can cause a drop in importance of these benefits in the total transfer payments picture. Also, long-term unemployment can cause discouraged workers to withdraw from the labor force, causing the statistical measure of the unemployment rate to decline even though the person is not working. (Recall that the number of unemployed includes *only* persons not working but who are availble and looking for work; it excludes non-workers discouraged from looking for work. See Section 2.) These factors are a possible reason why the importance of unemployment insurance benefits declined sharply for both Kentucky and the nation in 1984 and 1985.

Educational transfer payments are a small and relatively stable part of total governmental transfer payments to individuals, comprising only 1.5 percent of the total in 1985. Income maintenance transfer payments are mostly a reflection of pover-

TABLE 12-D

Components of Government Transfer Payments to Individuals, Kentucky and the United States, 1969-1985
(Amounts as Percents of Total Government Transfer Payments to Individuals[a])

	Medical Payments and Retirement[b]		Unemployment Insurance[c]		Educational[d]		Income Maintenance[e]		Veterans Benefits[f]	
Year	Kentucky	United States	Kentucky	United States	Kentucky	United States	Kentucky	United States	Kentucky	United States
1969	72.2%	75.0%	2.9%	3.5%	0.6%	0.5%	11.9%	10.9%	12.4%	10.1%
1970	70.8	72.5	3.7	5.3	0.6	0.5	13.4	12.3	11.5	9.4
1971	70.6	71.1	4.7	6.6	0.8	0.5	13.2	12.8	10.7	8.9
1972	71.8	72.3	4.3	5.7	0.6	0.4	12.8	12.6	10.6	8.9
1973	74.7	75.8	3.1	3.8	0.5	0.4	12.2	11.4	9.5	8.5
1974	72.2	74.2	3.7	4.9	0.5	0.4	14.6	12.3	9.0	8.1
1975	67.2	69.0	7.9	10.0	0.7	0.6	14.3	11.7	8.8	7.7
1976	70.3	72.1	6.2	8.4	0.8	0.7	14.4	11.8	8.3	7.0
1977	72.8	75.1	4.8	6.3	1.0	0.9	13.6	11.3	7.8	6.3
1978	75.3	77.7	3.9	4.5	1.1	1.0	12.2	10.7	7.4	6.0
1979	75.8	78.6	4.4	4.0	1.2	1.1	11.9	10.6	6.7	5.5
1980	72.9	76.7	7.4	6.1	1.4	1.3	12.5	11.0	5.8	4.8
1981	75.0	78.5	5.6	4.9	1.4	1.4	12.4	10.6	5.5	4.5
1982	75.2	78.4	7.1	6.5	1.2	1.2	11.3	9.6	5.1	4.2
1983	75.3	78.8	6.8	6.3	1.3	1.2	11.7	9.6	4.8	3.9
1984	78.4	81.4	3.5	3.7	1.3	1.2	11.9	9.8	4.8	3.8
1985	79.5	82.1	3.0	3.5	1.5	1.3	11.3	9.4	4.6	3.6

Source: U.S. Department of Commerce, Bureau of Economic Analysis. Kentucky data are through the Kentucky Economic Information System.

Notes

[a] The amounts do not sum exactly to 100 percent because of the exclusion of the category Other Government Payments to Individuals. In Kentucky, this is generally an insignificant amount. As used in these descriptions of Transfer Payments, Government is the composite of federal, state, and local governments.

[b] The category Medical Payments and Retirement includes retirement, disability, and medical payments. It includes Old-Age, Survivors, and Disability Insurance (OASDI, i.e., Social Security) payments; Railroad Retirement and Disability payments; Federal Civilian Employee Retirement payments; Military Retirement Payment; State and Local Government Employee Retirement payments; Workers Compensation payments (federal and state); Other Governmental Disability Insurance and Retirement payments (primarily Black Lung payments in Kentucky); Medicare payments; and State and Local Government Buy-ins for Medical Insurance and Medical Vendor Payments.

[c] The category Unemployment Insurance includes State Unemployment Insurance Compensation; Unemployment Compensation for Federal Civilian Employees (UCFE); Unemployment Compensation for Railroad Employees; Unemployment Compensation for Veterans (UCX); and Other Unemployment Compensation, such as Trade Readjustment Allowance payments, etc.

[d] The category Educational refers to Federal Educational and Training Assistance Payments, excluding payments to veterans. It includes Federal Fellowship Payments; Interest Subsidy on Higher Education Loans; Basic Educational Opportunity Grants; and Job Corps payments.

[e] The category Income Maintenance includes Supplemental Security Income (SSI) payments; Aid to Families With Dependent Children (AFDC); Food Stamps; and Other Income Maintenance, such as Emergency Assistance and Energy Assistance.

[f] The category Veterans Benefits includes Veterans Pensions, and Compensation; Educational Assistance to Veterans, Dependents, and Survivors; Veterans Life Insurance Benefit payments; and Other Assistance for Veterans.

ty, because they do not include Social Security benefits (included in retirement). The larger-than-average importance shown for these transfer payments in Kentucky is the expected result of Kentucky's below-average position in personal income and labor force participation and above-average rates of unemployment. Part of the reduced importance of income maintenance benefits (which generally are provided only to poverty stricken families) is perhaps the result of the increased importance over the years of retirement benefits (such as Social Security) that are related to previous work and earnings experience instead of poverty status. Veterans benefits tend to vary over the years according to the amount of war activity and generally decline over the years after a war. The data in Table 12-D reflect these influences. The importance of veterans benefits in total governmental transfer payments to individuals is larger in Kentucky than the nation, and this difference has been fairly stable over the years.

Total Transfer Payments

Table 12-E concerns total transfer payments, which include payments from both governments and businesses, and payments to both individuals and businesses. Two sets of data are presented: (1) per capita amounts of transfer payments for Kentucky and the nation, both in dollars and with Kentucky values as percentages of national values; and (2) transfer payments as percentages of total personal income for Kentucky and the nation and with Kentucky values as percentages of national values. (These data are the same as in Table 3-C.) The years covered are 1969 through 1985. Per capita transfer payments are smaller in Kentucky than nationally, with Kentucky at approximately 90 to 93 percent of the national average. While these percentages have been fairly steady over the years shown, a slight dip can be seen in the period 1970 through 1973, possibly the result of relative improvement in Kentucky economic performance. Since 1973, only the dip in 1977 and 1978 deviates from a relative plateau.

Transfer payments are consistently a larger percentage of total personal income in Kentucky than in the nation over the entire 17 year period. Kentucky's above-average values in transfer payments as a percent of personal income, compared with Kentucky's below-average values in the per capita comparisons, is not an inconsistency. Kentucky's per capita personal income in 1985 was 78.1 percent of the national average. If this percentage relationship were repeated exactly in the per capita transfer payments data, Kentucky's 1985 amount would be $1,595.8 instead of the actual amount of $1,902.3 (78.1 percent of the national amount of $2,043.9). This extra $306.5 per capita suggests a degree of income redistribution in favor of Kentucky resulting from transfer payments.

For federal aid and transfer payments combined, the effect is to redistribute in favor of Kentucky. But the trend since 1983 has been for federal aid to decline in importance. The expected result is that income redistribution in favor of Kentucky will diminish.

TABLE 12-E

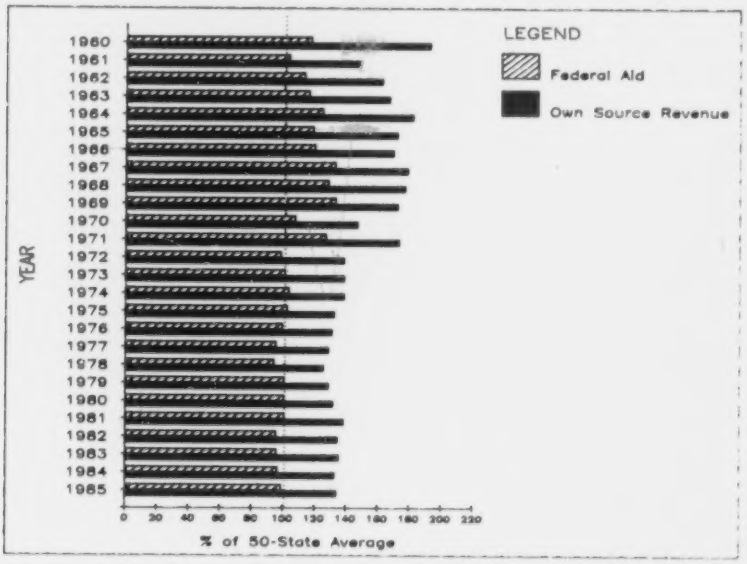
Total Transfer Payments,
Per Capita and as a Percent of Total Personal Income,
Kentucky and the United States, 1969-1985

Fiscal Year	Dollars Per Capita			As a Percent of Total Personal Income		
	Kentucky	United States	Kentucky as a % of U.S.	Kentucky	United States	Kentucky as a % of U.S.
1969	$ 319.2	$ 355.6	90%	10.9%	9.3%	117%
1970	372.3	421.5	88	11.8	10.4	114
1971	428.9	490.9	87	12.8	11.4	112
1972	471.8	541.4	87	12.9	11.6	111
1973	556.0	613.7	91	13.6	11.8	115
1974	654.4	718.7	91	14.4	12.7	113
1975	805.5	897.1	90	16.5	14.8	112
1976	869.7	969.6	90	16.1	14.6	111
1977	915.8	1,030.1	89	15.3	14.1	108
1978	970.1	1,100.4	88	14.7	13.5	109
1979	1,110.5	1,217.5	91	15.1	13.5	112
1980	1,330.4	1,430.9	93	16.7	14.4	115
1981	1,496.6	1,605.0	93	16.9	14.7	116
1982	1,622.9	1,770.6	92	17.6	15.4	114
1983	1,747.8	1,889.2	93	18.4	15.6	118
1984	1,795.3	1,922.7	93	17.3	14.7	118
1985	1,902.3	2,043.3	93	17.6	14.7	119

Source: U.S. Department of Commerce, Bureau of Economic Analysis. Kentucky data are through the Kentucky Economic Information System.

FIGURE 12-A

Federal Aid and Own Source General Revenue, State and Local Governments, Kentucky as a Percent of the 50-State Average, Fiscal Years 1960-1985



13. Debt Statistics of State and Local Governments

The analysis of state and local government debt contained in this section is based partly on data from the U.S. Bureau of the Census and partly on data from agencies of Kentucky state government. The Kentucky-source data provide additional or more detailed information, such as types of debt, purposes of debt, and division among types of local governments. But there are two very important advantages to using the federal-source data. First, the federal-source data allow Kentucky to be compared with the fifty states. Second, the debt-related statistics published by the federal agency are collected using the same definitions and measurement methods for each of the fifty states. Thus, it is much less likely that the measurement of debt in any particular state will be modified to accommodate practices peculiar to that state. This is not to suggest that the federal-source data are "better" than state-source data or that state-source debt statistics are tainted. The point is that reliable interstate comparisons can best be made using statistical information that is uniformly collected by one national agency.

Seven tables are presented in this section. Two tables are based on data only from the U.S. Bureau of the Census; four tables are based on data only from agencies of Kentucky state government; and one table summarizes and compares the federal-source and Kentucky-source data. Table 13-A presents both federal-source and Kentucky-source debt statistics for the period 1973 through 1985, for total outstanding long-term debt of Kentucky state and local governments. The purpose is to demonstrate how the two sources compare in the measurement of Kentucky's outstanding debt. Table 13-B uses federal-source data to compare Kentucky and the fifty states according to outstanding long-term debt per capita, for 1964 through 1985. Table 13-C uses federal-source data to compare Kentucky and the fifty states according to annual expenditure for interest on general debt, in dollars per capita and as a percent of state and local government own-source general revenue for 1960 through 1985. Table 13-D uses Kentucky-source data to show changes over the period 1971 through 1985 in outstanding long-term debt of *local* governments only, with distinctions as to bond type. Table 13-E uses Kentucky-source data to show changes over the period 1973 through 1985 in outstanding long-term debt for Kentucky *state* government only, with distinctions as to issuing agencies. Table 13-F describes debt types and issuing agencies for Kentucky *state* government. Table 13-G summarizes the debt related statistics for Kentucky state and local governments combined, for 1973 through 1985.

Debt of state and local governments is a controversial subject because of two major areas of disagreement. First, there is disagreement about the amount of total outstanding debt that a state or local government can carry without danger of default or of draining revenue which otherwise could be used for general government purposes. Second, there is disagreement about the obligation of the borrowing government to pay interest and retire principal, especially in the case of revenue bonds.

These two areas of disagreement are largely avoided in this report in the following manner.

First, the question of whether a debt is too large is addressed indirectly by comparing Kentucky debt with the average debt of the fifty states. If a state is unusually high or low in debt-related statistics relative to the 50-state average, there is at least a hint as to whether that state's debt is large or small. Second, the question of obligation for servicing debt (paying annual interest and making scheduled repayments of principal) is largely avoided in interstate comparisons based on federal-source data because all states are treated alike in collection of statistics. A more lengthy analysis of this second point was presented in last year's *Annual Economic Report*, and readers with special interest in this subject are referred to it.

It is sometimes argued that outstanding debt does not change the net position of a state or local government with regard to revenue available to spend for general government programs. If, for example, revenue bonds are issued to build a capital project that produces enough revenue to pay the costs related to the debt, the additional revenue and additional costs cancel each other, leaving no net effect on the governmental budget. Therefore, it can be argued that the higher level of state and local debt in Kentucky, relative to the fifty states, does not have a net reducing effect on governmental ability to spend for general government services.

On the other hand, the additional revenues and expenditures related to that debt-financed capital project are included in the federal-source revenue and expenditure statistics for state and local governments. If all debt-related revenues and expenditures could be excluded from the federal-source statistical data for all states, the above-average size of these amounts in Kentucky would cause Kentucky to appear lower in the interstate comparisons of revenues and expenditures. For example, the reported level of taxes per capita in Kentucky in 1985 was 70.5 percent of the fifty-state average, and expenditures per capita were 77.5 percent. If adjustments could be made for the debt-related revenues and expenditures, Kentucky's higher-than-average debt position would cause Kentucky's revenue and expenditure performance to appear even lower relative to the 50-state average. Having already used the revenue and expenditure data from the federal source to compare Kentucky with the fifty states, the analysis of debt in this section also takes the federal-source debt statistics at face value.

Differences in Debt Statistics

Table 13-A compares the federal-source and Kentucky-source statistics for outstanding long-term debt for Kentucky only, in the period 1973 through 1985. Differences between the two data sources vary from year to year. The most relevant comparisons are of total (state plus local) debt according to the two sources. In the period 1973 through 1978, Kentucky's total debt was larger in the Kentucky-source data than in the federal-source data, with the differences amounting to hundreds of millions of dollars. In 1977, the difference was $426.2 million, declin-

ing to $6.5 million in 1978. After 1978, the trend reversed—that is, the Kentucky source reported smaller amounts of total debt than the federal source. These negative differences ranged from $139.7 million in 1981 to $755.6 million in 1982. In 1985, the direction reversed again, with the Kentucky source reporting a larger debt than the federal source. However, the difference was small. What is particularly interesting is the large year-to-year variation. Between 1977 and 1979, the difference changed from $426.2 million in one direction to $612.3 million in the other direction, a combined change of over one billion dollars. For 1985, however, the two sources differed by only $87.2 million—less than one percent of total debt.

The purpose of illustrating these differences, variations, and direction changes between debt-related data reported by the federal source and the Kentucky source is not to discredit either source but instead to caution readers. It is encouraging that the 1985 amounts show only small differences between the two data sources, for total, state, and local debt. Differences of less than one percent suggest that as a practical matter, the 1985 totals reported by the two data sources are essentially identical.

TABLE 13-A
Outstanding Long-Term Debt of Kentucky State and Local Governments
A Comparison of U.S. Bureau of the Census Data with Kentucky Finance and Administration Cabinet Data, 1973-1985

	Kentucky Debt as Reported by the U.S. Bureau of the Census					Kentucky Debt as Reported by the Kentucky Finance and Administration Cabinet		
Fiscal Year	Total State Debt	Local General Debt	Utility Debt	Total Local Debt	Total Debt	Total State Debt	Total Local Debt	Total Debt
	(Millions of Dollars)					(Millions of Dollars)		
1973	$1815.6	$1157.8	$ 417.5	$1575.3	$ 3390.9	$1611.0	$2044.1	$ 3655.1
1974	1858.5	1276.4	432.3	1708.7	3567.2	1678.5	2253.0	3931.5
1975	1965.0	1312.7	482.5	1795.2	3760.2	1671.8	2326.3	3998.1
1976	1996.6	1456.6	558.8	2015.4	4012.0	1635.4	2480.2	4115.6
1977	2040.6	1641.9	505.1	2146.7	4187.3	1998.3	2615.2	4613.5
1978	2617.4	1889.5	744.1	2633.6	5251.0	2092.8	3164.7	5257.5
1979	2810.5	3266.2	724.3	3990.6	6801.1	2546.1	3642.7	6188.8
1980	3035.2	3604.3	752.2	4356.5	7391.7	2818.2	4023.6	6841.8
1981	3026.6	3556.8	853.4	4410.2	7436.8	3012.4	4284.7	7297.1
1982	2655.2	4727.6	924.8	5652.4	8307.6	2647.1	4904.9	7552.0
1983	3030.8	5518.4	810.5	6328.9	9359.7	2999.2	5889.7	8888.9
1984	3384.1	5110.5	1114.0	6224.5	9608.6	3366.9	6034.0	9400.9
1985	3633.3	5593.0	1114.9	6707.9	10,341.2	3693.3	6735.1	10,428.4

Source: U.S. Department of Commerce, Bureau of the Census, *Governmental Finances*, various years; Kentucky Finance and Administration Cabinet, *Kentucky Local Debt Report* and *Kentucky Annual Financial Report*, various years.

Note: Total Local Debt is the sum of Local General Debt plus Utility Debt. Total Debt is the sum of Total State Debt plus Total Local Debt.

Federal-Source Debt Statistics

State Plus Local Government Debt. Table 13-B compares Kentucky and the fifty states according to per capita amounts of outstanding long-term debt of state plus local governments. Data are from the U.S. Bureau of the Census, the years covered are 1964 through 1984, and Kentucky amounts are shown as percentages of the national amounts. Kentucky was above the national average in per capita debt in all of the 21 years shown, except in 1965 when Kentucky was slightly below average. The highest year was 1980 when Kentucky's per capita debt was 154 percent of the national average. The most recent high was 149.2 percent in 1983, but the percentages for 1984 and 1985 were lower. In fact, the 1985 value of 128.2 percent was the lowest since 1978.

Not obvious in Table 13-B is that Kentucky's level of debt relative to the fifty states is higher than a casual observation suggests. Kentucky's usual position in other governmental finance statistics (revenue and expenditure) is considerably below the national average, whereas in debt-related statistics Kentucky is well above average. For example, in 1985 Kentucky was only 70.5 percent of the 50-state average in taxes per capita and only 77.5 percent in per capita expenditures. Compared with the state's below-average position in taxes and expenditures, even the low 1985 value of 128.2 percent of the national average in per capita debt represents a high position.

Interest on Debt. Kentucky's above-average level of outstanding debt suggests that interest expenditures also will be above average. Table 13-C compares Kentucky and the fifty states according to expenditures for interest on state and local general debt for the 26 year period 1960 through 1985. Two types of comparisons are presented. Per capita interest expenditures are shown in dollars, and the Kentucky amounts also are expressed as percentages of the national average. Also, interest expenditures are expressed as percentages of own-source general revenue for Kentucky and the fifty states, and the Kentucky values also are shown as percentages of the national average.

Table 13-C (column 3) shows Kentucky's per capita interest expenditures to be 50 percent of the national average in 1960, and 66 percent in 1961. But interest expenditures increased to above-average levels in the period 1963 through 1973, reaching a high of 138.5 percent of the national average in 1968. A decline began after 1968 and continued until 1976, with Kentucky below the national average in the period 1974 to 1977. But above-average interest expenditures began again in 1978 and continued through 1985, with the high of 150.7 percent in 1980, the highest value in the entire 26 year period. Kentucky's interest expenditures were 116.6 percent of the national average in 1984, and 111.4 percent in 1985.

Table 13-C also shows interest expenditures as a percent of own-source general revenue (taxes and charges and miscellaneous revenue), for Kentucky and the nation and also the Kentucky values as percentages of the national values (column

TABLE 13-B

Outstanding Long-Term General Debt of State and Local Governments, Per Capita and as Percent of the Average of the 50 States, Kentucky and the Average of the 50 States, Fiscal Years 1964-1985

Fiscal Year	Dollars per Capita		Kentucky as a Percent of 50-State Average
	50-State Average	Kentucky	
1964	$ 381.8	$ 386.4	101.2%
1965	404.0	397.2	98.3
1966	430.1	453.7	105.5
1967	456.2	596.3	130.7
1968	477.9	634.1	132.7
1969	520.6	663.7	127.5
1970	548.7	683.4	124.5
1971	592.5	746.4	126.0
1972	652.2	873.2	133.9
1973	697.7	881.8	126.4
1974	761.6	917.4	120.5
1975	795.9	944.9	118.7
1976	875.8	978.2	111.7
1977	949.3	1030.1	108.5
1978	1020.3	1248.1	122.3
1979	1080.8	1659.3	153.5
1980	1176.2	1811.6	154.0
1981	1255.0	1790.9	142.7
1982	1351.3	1998.6	147.9
1983	1542.9	2301.9	149.2
1984	1707.4	2283.5	133.7
1985	1930.7	2476.1	128.2

Source: U.S. Department of Commerce, Bureau of the Census, *Governmental Finances*, various years. Kentucky data are through the Kentucky Economic Information System.

Note: See the Glossary at the end of the report for the Census Bureau's definition of Debt and Long-Term Debt. See also Table 13-G, following, for a comparison with data on outstanding long-term debt from the Kentucky Finance and Administration Cabinet.

TABLE 13-C

Per Capita Expenditure for Interest on General Debt of State and Local Governments, Fiscal Years 1960-1985

Fiscal Year	Dollars Per Capita			Percent of Own-Source General Revenue		
	50-State Average	Kentucky	Kentucky/ 50-State Average	50-State Average	Kentucky	Kentucky/ 50-State Average
1960	$ 9.28	$ 4.64	50.0%	3.8%	3.1%	81.6%
1961	9.97	6.58	66.0	3.9	3.7	94.9
1962	10.81	10.69	98.8	4.0	5.7	142.5
1963	11.67	12.73	109.0	4.1	6.4	156.1
1964	12.33	13.33	108.1	4.0	6.4	160.0
1965	12.87	14.27	110.8	4.0	6.3	157.5
1966	13.76	14.78	107.4	3.8	5.8	152.6
1967	15.32	18.44	120.4	4.0	6.4	160.0
1968	16.39	22.69	138.5	3.9	7.4	189.7
1969	18.54	23.64	127.5	3.9	6.5	166.7
1970	21.46	26.59	123.9	4.0	6.8	170.0
1971	24.61	32.35	131.5	4.3	7.7	179.1
1972	28.49	35.67	125.2	4.4	7.8	177.3
1973	32.11	35.26	109.8	4.5	6.8	151.1
1974	35.94	35.76	99.5	4.6	6.2	134.8
1975	40.76	40.21	98.7	4.8	6.2	129.2
1976	47.20	41.36	87.6	5.1	5.9	115.7
1977	51.85	48.25	93.1	5.1	6.4	125.5
1978	53.95	54.78	101.6	4.9	6.6	134.7
1979	57.83	72.56	125.5	4.8	7.8	162.5
1980	64.89	97.79	150.7	4.9	9.7	198.0
1981	74.60	90.67	121.5	5.1	8.6	168.6
1982	86.08	110.72	128.6	5.4	9.8	181.5
1983	103.02	119.87	116.4	6.1	10.0	163.9
1984	121.34	141.48	116.6	6.4	10.3	160.9
1985	135.83	151.26	111.4	6.6	10.0	151.5

Source: U.S. Department of Commerce, Bureau of the Census, *Governmental Finances*, various years. Kentucky data are through the Kentucky Economic Information System.

6). In this case, Kentucky's interest expenditures appear much higher relative to the national average than was shown in the per capita comparisons. This is because Kentucky is much lower relative to the national average in per capita amounts of own-source general revenue than in per capita interest expenditures. As shown in the per capita interest expenditure comparisons, 1960 and 1961 were low debt and interest years, but in all of the years 1962 through 1985, Kentucky was above the 50-state average in interest expenditure as a percentage of own-source general revenue. The fluctuations over the years are similar in both series, but in the period 1974 through 1977, the Kentucky values were below average in the per capita interest expenditures, while they were merely less above average in the interest-to-revenue series. The peak year for both the interest-to-revenue series and the per capita interest series was 1980. The 1985 value of 151.5 percent, for Kentucky's interest-to-revenue series as a percentage of the nation's interest-to-revenue series, was its lowest since 1978.

Kentucky-Source Debt Statistics

The next four tables on debt statistics use only Kentucky-source data. These data do not allow comparison with the 50-state average, but they do give additional detail as to types of bonds, types of debt-financed activities, government agencies issuing the debt, and changes over the years. Data are available for local debt since 1971 but for state debt only since 1973. Table 13-D concerns local governments only; Tables 13-E and 13-F concern state government only; and Table 13-G concerns both.

Local Government Debt. Table 13-D shows the outstanding debt of Kentucky local governments by types of bonds and by types of local governments, for the period 1971 through 1985. Amounts are shown for two types of bonds—industrial revenue bonds and other bonds. The other bonds category is shown according to the types of issuing local governments and these amounts are shown as percentages of total other bonds. In 1971, industrial revenue bonds were 38.1 percent of total local bonds, but this percentage declined over the years and was 26.2 percent in 1985. The distribution of other bonds by type of local government has changed over the years shown. County governments have increased in relative share over all of the period except for a slight decline since 1983. City governments have declined slightly in relative share over the years shown. A large degree of decline is shown for special districts. For school districts, the share of total other bonds has declined over the entire period shown, with a 1985 value (14.2 percent) of only about one-third of the 1971 value (40.2 percent). The decline in relative importance of school debt coincides with a period of decline in school-age population relative to total population.

TABLE 13-D
Kentucky Local Government Debt Outstanding
Total and by Types—Fiscal Years 1971-1985

Fiscal Year	Outstanding Debt of Kentucky Local Governments						
				Distribution of Other Bonds by Types of Local Governments			
	Total	Industrial Revenue Bonds	Other Bonds	County Governments	City Governments	Special Districts	School Districts
	(Millions of Dollars)			(Percent)			
1971	$1684.9	$ 642.1	$1042.8	5.5%	43.2%	11.2%	40.2%
1972	1817.1	602.5	1214.7	6.6	41.8	12.9	38.7
1973	2044.1	628.3	1415.9	7.8	43.5	11.0	37.7
1974	2253.0	654.1	1599.0	9.9	42.6	11.7	35.8
1975	2326.3	670.9	1655.4	11.4	41.7	11.3	35.6
1976	2480.2	720.0	1760.2	12.2	41.4	11.8	34.6
1977	2615.2	719.6	1931.6	13.2	42.6	10.7	33.5
1978	3164.7	726.8	2437.9	16.9	46.7	9.1	27.2
1979	3642.7	818.8	2823.9	21.1	44.0	9.5	25.4
1980	4023.6	887.0	3136.6	27.0	40.3	9.6	23.1
1981	4284.7	1103.1	3181.6	26.9	40.7	10.4	22.1
1982	4904.9	1281.1	3623.8	33.8	38.4	9.3	18.5
1983	5889.7	1523.2	4366.5	38.6	36.4	8.6	16.4
1984	6034.0	1558.0	4476.0	38.1	38.1	8.0	15.8
1985	6735.1	1764.6	4970.5	37.7	40.6	7.3	14.2

Source: Kentucky Finance and Administration Cabinet, *Kentucky Local Debt Report*, various years.

Note: Debt service on bonds issued by the Kentucky School Building Authority, a state agency, is paid partially by the Authority and partially by local governments according to a participation formula established by the Authority. Total local debt reported above does not include the local government's share of debt related to these KSBA bonds.

State Government Debt. Table 13-E shows total outstanding debt of Kentucky state government, in dollar amounts and as percentage distributions among nine groups of issuing agencies, for the period 1973 through 1985. The purposes of the debt-finance expenditures are suggested by the titles of the nine issuing agencies. More complete information about these nine agencies is presented as Table 13-F. In cases in which data are not shown in Table 13-E, those particular agencies had not been created yet.

Increases are shown for the three more recently created groups—the School Building Authority, the Higher Education Student Loan Corporation, and the Development Finance Authority. In 1985, these three new groups accounted for 21.8 percent of state debt. Share of total state debt also increased over the years shown for the Kentucky Housing Authority (loans and loan guarantees for low-income housing), although decline began after 1982. Combining the Housing Authority's 20.1 percent of total outstanding debt in 1985 with the 21.8 percent of total for the other three groups with increasing shares, gives a total of 41.9 percent in 1985. The remainder of total state debt in 1985 was attributed to the

TABLE 13-E

Kentucky State Government Debt Outstanding, Total and by Issuing Agencies
Fiscal Years—1973-1985

Fiscal Year	Total Outstanding Debt	Shares of Total Debt Outstanding by Issuing Agency								
		Group 1 Kentucky State Property and Buildings Commission	Group 2 Turnpike Authority of Kentucky[a]	Group 3 Kentucky School Building Authority[b]	Group 4 Kentucky Housing Corporation	Group 5 Kentucky Pollution Abatement Authority[c]	Group 6 Kentucky Higher Education Student Loan Corporation	Group 7 State Universities	Group 8 Kentucky Development Finance Authority	Group 9 Kentucky Correctional Facilities Construction
	(Million $)	(Percent)								
1973	$1,611.0	30.2%	47.8%					22.0%		
1974	1,678.5	28.0	44.6		3.1%	1.4%		22.9		
1975	1,671.8	28.9[d]	44.0		3.1[f]	1.4		22.6		
1976	1,635.4	28.5[d]	44.3		3.1[f]	1.4		22.7		
1977	1,998.3	24.5[e]	45.2		10.6	1.1		18.6		
1978	2,092.8	22.4[e]	43.9		15.3	1.1		17.4		
1979	2,546.1	17.6	45.1		19.6	1.1	1.2%	15.4		
1980	2,818.2	15.5	45.0	1.0%	22.6	1.4	1.1	13.5		
1981	3,012.4	14.1	41.5	1.7	22.2	1.5	4.6	13.6	0.8%	
1982	2,647.1	18.0	28.7	2.3	23.8	1.6	5.3	15.8	4.5	
1983	2,999.2	18.4	24.1	3.0	21.7	1.7	10.0	14.6	6.4	
1984	3,366.9	17.4	30.0	2.6	19.5	1.5	8.8	13.1	7.1	
1985	3,693.3	17.0	26.4	2.6	20.1	1.9	7.6	12.0	11.6	0.9%

Source: Kentucky Finance and Administration Cabinet, *Kentucky Annual Financial Report*, various years.

Notes

[a] Includes Kentucky Department of Highways debt.
[b] Includes portion of debt service provided by local governments; debt service on School Building Revenue Bonds is paid by the Authority and by local governments according to a participation formula established by the Authority.
[c] With the exception of Industrial Revenue Bonds, this debt is an obligation of local governments.
[d] Excludes $22.2 million in Bond Anticipation Notes for Project 23, the Kentucky State Horse Park, authorized but not issued in 1975 or 1976.
[e] Excludes $10.5 million in Bond Anticipation for Project 23, the Kentucky State Horse Park, authorized but not issued in 1977 or 1978.
[f] Excludes $50 million in second and third series Bond Anticipation Notes for the Corporation.

TABLE 13-F
Kentucky State Government Debt, Types and Issuing Agencies

General Obligation Bonds—issued through the State Property and Buildings Commission, after general referendum approval as required by the Kentucky Constitution. They pledge the full faith, credit, and taxing power of Kentucky and denote application of specific or general tax revenues to provide payment of principal and interest requirements on the debt. No new general obligation bonds have been issued since 1965 and there were no general obligation bonds authorized but unissued on June 30, 1985.

Project Revenue Bonds—project revenue debt pledges only the revenues produced by the project so funded as security for repayment, and does not *directly* obligate the state of Kentucky. Project revenues may come from General Assembly appropriations or from revenues generated from the project financed by the debt. Therefore, project revenue debt may be further classified as follows:

Appropriation supported—agencies and authorities issuing debt which is supported through a General Assembly appropriation are considered to issue state supported revenue bonds. These issuing agencies, which cannot incur debt for any project without prior approval of the General Assembly, include:

Kentucky State Property and Buildings Commission—an independent agency of the state that, upon application of any state agency, will issue bonds in its own name to pay the costs of acquiring land and the construction and equipping of buildings for the use and occupancy of applying agencies. As described above, the Commission also issues all general obligation bonds for highways, parks, and veterans bonus.

Turnpike Authority of Kentucky—created in 1960 as a governmental agency of the state to acquire, construct, finance, maintain, repair and operate turnpike projects and resource recovery road projects under written agreements with the Transportation Cabinet. Such roads are leased to the Transportation Cabinet, with rental payments providing debt service on debt issued for such purposes.

Kentucky School Building Authority—an agency of the state, established as a public corporation to reduce the backlog of schoolhouse construction by: making direct cash grants to local school districts for construction and maintenance of schools when the district is without such funds; issuing bonds in their name on behalf of school districts to finance school construction; and entering into lease agreements with the Department of Education to build state-owned department-operated facilities. Although this agency is classified here as issuing appropriation supported debt, not all debt service is paid from state appropriation. Debt service is supported both by funds appropriated by the state *and* by funds provided by local governments according to a participation formula established by the Authority.

State Universities—all state universities may issue debt to construct educational buildings and housing and dining facilities. Each institution provides by resolution whether the bonds shall be payable solely from the revenues of specific buildings or payable from the revenues of other buildings.

TABLE 13-F (Continued)
Kentucky State Government Debt, Types and Issuing Agencies

Non-Appropriation Supported—agencies and authorities issuing debt to finance facilities or projects that are not used directly for state purposes and which are supported by revenues assessed to users are considered to issue non-state supported revenue bonds. At the end of fiscal year 1985, this revenue debt was issued by the following agencies:

Kentucky Housing Corporation—established in 1972 to increase the supply of housing for low income persons by making or participating in insured construction loans, and making or participating in insured mortgage loans when financing is not available from private lenders under reasonably equal terms.

Kentucky Pollution Abatement Authority—established in 1972 to issue debt and make repayable grants to local government units for assistance in construction of wastewater treatment facilities for the abatement of water pollution in the state.

Kentucky Higher Education Student Loan Corporation—makes and guarantees student loans and re-insures such student loans with the U.S. federal government. The Corporation was created to act as a financing authority and to assure a secondary market for insured student loans.

Kentucky Correctional Facilities Construction Authority—created in 1982 to provide an additional and alternative method of constructing, improving, or repairing and financing jails. The projects funded will include the acquisition, construction, repair or improvement of both regional and local jail facilities.

Kentucky Development Finance Authority—established in 1958 to promote the industrial development of Kentucky. KDFA is the only agency at the state level with the authority to issue industrial revenue bonds at the request of local governments. These revenue bonds represent obligations payable solely from payments made by the borrowing entities and are secured by the property financed. Upon repayment of a bond, ownership of the acquired property transfers to the entity served by the bond issuance. These bonds do not constitute a general debt, liability, or moral obligation of the state.

Source: Kentucky Finance and Administration Cabinet, *Kentucky Annual Financial Report*, 1985.

TABLE 13-G

Outstanding Long Term Debt of Kentucky State and Local Governments, Total and Per Capita, by Types of Debt—Fiscal Years 1973-1985

Fiscal Year	Outstanding Long-Term Debt					Per Capita Outstanding Long-Term Debt				
			Local					Local		
	State and Local Total	State Total	Local Total	Industrial Revenue Bonds	Other	State and Local Total	State Total	Local Total	Industrial Revenue Bonds	Other
	(Millions of Dollars)					(Dollars Per Capita)				
1973	$3,655.1	$1,611.0	$2,044.1	$ 628.3	$1,415.9	$1,084.0	$477.8	$ 606.2	$186.3	$ 419.9
1974	3,931.5	1,678.5	2,253.0	654.1	1,599.0	1,150.6	491.2	659.4	191.4	468.0
1975	3,998.1	1,671.8	2,326.3	670.9	1,655.4	1,152.5	481.9	670.6	193.4	477.2
1976	4,115.6	1,635.4	2,480.2	720.0	1,760.2	1,165.9	463.3	702.6	204.0	498.6
1977	4,613.5	1,998.3	2,615.2	719.6	1,931.6	1,290.5	559.0	731.5	201.3	540.3
1978	5,257.5	2,092.8	3,164.7	726.8	2,437.9	1,456.0	579.6	876.4	201.3	675.1
1979	6,188.8	2,546.1	3,642.7	818.8	2,823.9	1,698.4	698.7	999.6	224.7	774.9
1980	6,841.8	2,818.2	4,023.6	887.0	3,136.6	1,866.8	768.9	1,097.8	242.0	855.8
1981	7,297.1	3,012.4	4,284.7	1,103.1	3,181.6	1,985.1	819.5	1,165.6	300.1	865.5
1982	7,552.0	2,647.1	4,904.9	1,281.1	3,623.8	2,044.4	716.6	1,327.8	346.8	981.0
1983	8,888.9	2,999.8	5,889.7	1,523.2	4,366.5	2,393.3	807.7	1,585.8	410.1	1,175.7
1984	9,400.9	3,366.9	6,034.0	1,558.0	4,476.0	2,527.1	905.1	1,622.0	418.8	1,203.2
1985	10,428.4	3,693.3	6,735.1	1,764.6	4,970.5	2,798.8	991.2	1,807.6	473.6	1,334.0

Source: Kentucky Finance and Administration Cabinet, *Kentucky Local Debt Report* and *Kentucky Annual Financial Report*, various years. Per capita totals calculated using Bureau of the Census population data.

other groups, each of whose relative share of total debt generally has declined over the years shown. The Property and Buildings Commission declined from 30.2 percent of total in 1975 to 17 percent in 1985. The Turnpike Authority (which also finances the Resources Recovery roads and the Economic Development roads) declined from 47.8 percent in 1973 to 26.4 percent in 1985. State universities also declined, from 22 percent in 1973 to 12 percent in 1985. All of the changes in shares of total state debt occurred while total dollars of outstanding state debt increased.

State Plus Local Government Debt. Table 13-G summarizes the Kentucky-source data from Tables 13-D and 13-E, with both total and per capita amounts shown in dollars. Because of population changes over the years, the best comparisons are made in terms of the per capita amounts. Note that growth of these amounts over the years shown is exaggerated because of inflation. Of interest is how the various categories changed in relative importance over the years shown. Comparing 1973 and 1985, state debt as a percentage of total debt declined from 44.1 percent in 1973 to 35.4 percent in 1985. That is, local debt as a percentage of total debt increased from 55.9 percent in 1973 to 64.6 percent in 1985. In 1985, therefore, state debt was slightly more than one-third of total debt, and local debt was slightly less than two-thirds of total debt. Within the total for local debt, industrial revenue bonds declined from 30.7 percent of total local debt in 1973 to 26.2 percent in 1985. Compared with total state plus local debt, local industrial revenue bonds decreased only slightly, from 17.1 percent of total in 1973 to 16.9 percent in 1985. These changes in relative importance of industrial revenue bonds are perhaps misleading; within the total of state and local debt, many bond issues are revenue bonds to finance revenue-producing projects and therefore resemble industrial revenue bonds.

FIGURE 13-A

Per Capita Outstanding Long-Term General Debt of State and Local Governments, Kentucky as a Percent of the 50-State Average, Fiscal Years 1964-1985

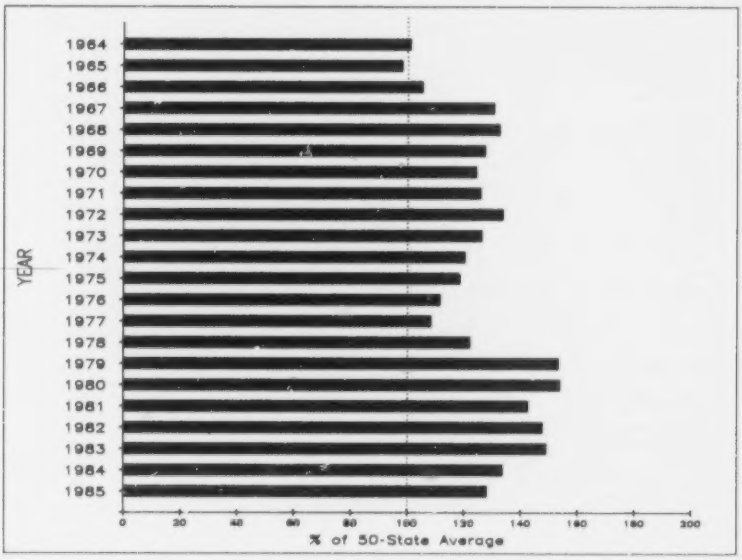
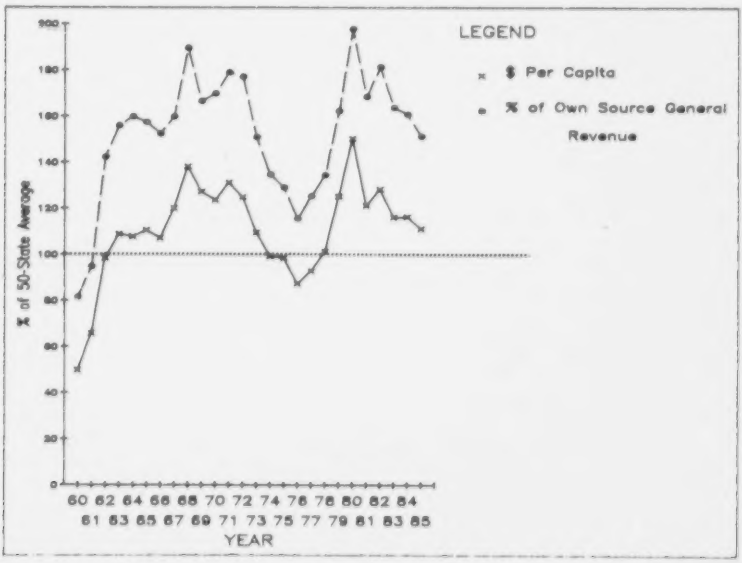


FIGURE 13-B

Interest on General Debt of State and Local Governments: Per Capita Expenditure and Expenditure as a Percent of Own Source General Revenue, Kentucky as a Percent of the 50-State Average, Fiscal Year 1985



PART IV
PUBLIC TRANSPORTATION FINANCING IN KENTUCKY: RECENT TRENDS

Introduction

The financing of public transportation is selected as a topic for special study for three main reasons: the large size of governmental expenditures for public transportation; the relative decline of expenditures in recent years; and the recognized importance of transportation facilities in economic development. In 1985, transportation was the third largest category of Kentucky state government expenditures (17.1 percent), and was exceeded only by Human Resources (25.6 percent) and Education and Humanities (30.1 percent). In the period 1981 through 1985, however, transportation expenditures declined as percentages of the state government's total expenditures, and the main sources of revenue for transportation expenditures (motor vehicle fuel and license taxes, and federal aid) also declined as percentages of total state government revenues. Part IV describes how transportation fits into the overall scheme of Kentucky state government finance, and examines the changing importance of transportation finance over the years and among the fifty states.

Two sources of data are available for the study of transportation finance. One, the Bureau of the Census in the U.S. Department of Commerce, publishes governmental finance data collected according to uniform definitions and procedures, allowing annual comparisons among the fifty states. Two, information was made available by certain Kentucky state government sources, namely the Finance and Administration Cabinet and the Transportation Cabinet. This information is more detailed than the Bureau of the Census data but does not allow comparison among the fifty states.

Part IV is divided into three sections. Section 14 describes the role of transportation in Kentucky state government finance in 1985 and the changing importance of transportation expenditures and revenues over the period 1976 through 1985, using state government data. Section 15 describes Kentucky's unique method for financing its modern, high-speed highways and examines the main revenue sources for transportation expenditures. Section 16 uses Bureau of the Census data to examine the importance of transportation finance in Kentucky relative to the average of the fifty states, using data for the state and local governments combined. State and local government data are combined because the differing importance of state relative to local government financing among the fifty states can cause distortions in comparisons based on state-only or local-only data.

14. Interrelationships and Trends in Kentucky State Government Financing

Revenue and Expenditures

The relative importance of types of state government revenue and expenditures for 1985 is described in Table 14-A. Data are totals of five state funds: the General, Transportation, Federal, Capital Projects, and Debt Service Funds. Total 1985 revenue of $4,490.6 million is described in detail according to sources, both in dollars and as percents of totals. The three largest sources of total revenue, accounting for 71.9 percent of the total, are federal aid (29.7 percent), total sales and usage taxes, excluding the motor vehicle fuel tax (24.9 percent), and the individual income tax (17.3 percent). Total tax revenue is 64.6 percent of total revenue.

TABLE 14-A
Revenue and Expenditures, Totals and Major Components, Kentucky State Government, Fiscal Year 1985

Revenue and Expenditure Components	Millions of Dollars	Percent of Total
Revenue, Total	$4,490.636	100.0%
Miscellaneous Non-tax Revenue	253.476	5.6
Federal Aid	1,335.312	29.7
Taxes, Total	2,901.848	64.6
Total Sales and Usage	1,119.587	24.9
Coal Severance	207.363	4.6
Motor Vehicle Fuels	195.748	4.4
Motor Vehicle Registration	53.742	1.2
License and Privilege	51.865	1.2
Income, Individual	776.569	17.3
Income, Corporate	211.284	4.7
Property	234.713	5.2
Inheritance and Estate	50.977	1.1
Expenditures, Total	$4,619.088	100.0%
General Government	628.292	13.6
Education and Humanities	1,392.620	30.1
Human Resources	1,181.611	25.6
Transportation	788.164	17.1
Capital Projects	111.478	2.4
Debt Service	164.932	3.6
Other	351.991	7.6

Source: Kentucky Finance and Administration Cabinet, *Kentucky Annual Financial Report*, Fiscal Year 1985.

The majority (86.4 percent) of total expenditures of $4,619.1 million are concentrated in four categories—general government (13.6 percent), education and humanities (30.1 percent), human resources (25.6 percent), and transportation (17.1 percent). The excess of total expenditures over total revenue ($128.5 million, or 2.8 percent of total expenditures) consists of three items not shown: differences between the beginning and ending fund balances, proceeds of new bond issues in excess of retirement of old bond issues, and statistical discrepancies.

TABLE 14-B

Revenue and Expenditures according to Budgetary Funds, Totals and Major Components, Kentucky State Government, Fiscal Year 1985

Revenue and Expenditure Components	General Fund	Transportation Fund	Federal Fund	Capital Projects Fund	Debt Service Fund	Total Fund
			(Millions of Dollars)			
Revenue, Total	$2,547.7	$552.1	$1,335.1	$120.7	$ 16.0	$4,571.6
Federal Aid	3.7	5.7	1,302.4	27.1	—	1,338.9
Taxes, Total	2,467.7	376.0	—	—	—	2,843.7
Investments	29.1	16.0	—	24.6	16.0	85.7
Other	47.2	154.4	32.7	68.9	—	303.2
Expenditures, Total	2,476.8	535.6	1,330.3	111.5	194.7	4,648.9
General Government	577.3	—	51.0	44.9	—	673.2
Education and Humanities	1,182.2	—	210.4	4.2	—	1,396.8
Human Resources	392.1	—	789.5	7.1	—	1,188.7
Transportation	1.7	535.6	250.9	0.1	—	788.3
Debt Retirement	—	—	—	—	52.3	52.3
Interest and Fiscal Charges	—	—	—	—	142.4	142.4
Other	323.4	—	28.5	55.2	—	407.1

Source: Same as Table 14-A.

By Budgetary Fund. Not shown in Table 14-A is how the various revenue and expenditure categories are related nor how they fit into the various budgetary funds into which state government finances are organized. To help explain the relationships between revenue and expenditures and the five state funds included in this analysis, additional information is presented in Tables 14-B and 14-C. Revenue and expenditure totals for the five state funds are shown in Table 14-B including detail of the four revenue and seven expenditure groups. The same data are presented in Table 14-C with the detail shown as percentages of the totals.

Several interesting relationships are apparent. For example, Table 14-B shows that total transportation expenditures in 1985 were $788.3 million, while the total revenue in the Transportation Fund was only $552.1 million. What was

the revenue source for the additional transportation expenditures? The data in Table 14-B reveal that the additional transportation expenditures were financed by federal aid of $250.9 million. The table also shows that federal aid was important in other expenditure categories, including education and humanities ($210.4 million out of $1,396.8 million or 15.0 percent), and especially human resources ($789.5 million out of $1,188.7 million or 66.0 percent).

Table 14-C shows that earnings from investments were only 1.9 percent of total revenue but accounted for 20.4 percent of revenue for the Capital Projects Fund. General Fund revenue was almost entirely from taxation (96.9 percent) while 68.1 percent of Transportation Fund revenue was from taxation. The unusually large size of some of the "other" categories results from the desire not to complicate the tables with excessive detail. Other revenue sources in the Transportation Fund included various license fees, permits, and charges for services, including tolls. In the Capital Projects Fund, other revenue included some charges for services; other expenditures were mainly for commerce and natural resources and environmental protection.

TABLE 14-C

Revenue and Expenditures according to Budgetary Funds, Totals and Major Components, as Percentages of Totals, Kentucky State Government, Fiscal Year 1985

Revenue and Expenditure Components	Budgetary Fund					
	General Fund	Transportation Fund	Federal Fund	Capital Projects Fund	Debt Service Fund	Total
	(Percent)					
Revenue, Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Federal Aid	0.1	1.0	97.6	22.5	—	29.3
Taxes, Total	96.9	68.1	—	—	—	62.2
Investments	1.1	2.9	—	20.4	100.0	1.9
Other	1.9	28.0	2.4	57.1	—	6.6
Expenditures, Total	100.0	100.0	100.0	100.0	100.0	100.0
General Government	23.3	—	3.8	40.3	—	14.5
Education and Humanities	47.7	—	15.8	3.8	—	30.0
Human Resources	15.8	—	59.3	6.4	—	25.6
Transportation	0.1	100.0	18.9	—	—	17.0
Debt Retirement	—	—	—	—	73.1	1.1
Interest and Fiscal Charges	—	—	—	—	26.9	3.1
Other	13.1	—	2.1	49.5	—	8.8

Source: Same as Table 14-A.

Changes over time. While Kentucky-source data do not allow meaningful comparison of Kentucky with the 50-state averages of revenue and expenditures, comparison can be made of Kentucky data over a period of years. Data are presented in Tables 14-D and 14-E in a form suitable for examining changes over the years. Table 14-D presents details of revenue and expenditures as percentages of totals. Table 14-E presents the same data but in the form of index numbers with 1980 values equal to 100 percent.

Because Tables 14-D and 14-E are both based on the same data, changes in relationships can be viewed in either table. Nevertheless, the pictures presented by the two tables differ in some important respects. For example, coal severance tax revenue declined in 1985 in Table 14-D but increased in Table 14-E, with the decline in Table 14-D hinting that the increase in Table 14-E was less than average—that is, less than the percentage increase in total taxes. Also, the sizeable increase in federal aid in 1985, as shown by the index-number data in Table 14-E, appears to be only a slight increase in the percentage-of-total data in Table 14-D. These peculiarities result mainly from the necessity that all parts shown in Table 14-D must sum to 100 percent. Thus, a decline, for example, in part A can cause part B to increase as a percentage of the total, even though part B might not increase in absolute value. Also, the index values in Table 14-E have a general upward trend because of the increased money values accompanying economic growth and inflation.

Some decline is shown in Table 14-D in the relative importance of federal aid, with its share averaging 30.3 percent in the first five years but only 29.1 percent in the second five years. On the other hand, federal aid as a share of total revenue increased in the last three years, rising from 27.6 percent in 1982 to 29.7 percent in 1985.

Generally, the importance of total tax revenue has changed in a manner opposite that of federal aid over the ten year period. For particular tax types, generally increasing shares are shown for the individual income tax and license and privilege taxes. The marked increase in importance of state property tax in 1978 resulted from the redefinition of a major part of the local school property tax to become a state tax. The coal severance tax increased in relative importance from 1976 through 1982 but declined thereafter, nearly reaching its 1976 low in 1985. All of the other tax types either declined in relative importance over the ten year period or remained stable. The sales and usage tax peaked in 1978, declined to a low in 1981, but increased slightly after 1981. The corporation income tax declined from 6.4 percent of total revenue in 1976 to 4.7 percent in 1985. The largest decline occurred in the combined motor vehicle fuel and registration taxes, with their relative share of total revenue falling from 9.8 percent in 1976 to only 5.6 percent in 1985. Since 1980, the most important declines occurred in the coal severance tax and motor vehicle fuel tax.

The relative importance of expenditure categories also is shown in Table 14-D. Education and humanities increased in relative importance generally over the en-

TABLE 14-D

Revenue and Expenditures, Totals and Major Components, as Percentages of Totals, Kentucky State Government, Fiscal Years 1976-1985

	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985
					(Millions of Dollars)					
Revenue, Total	$2,115.1	$2,321.7	$2,643.0	$3,032.3	$3,270.7	$3,401.4	$3,529.9	$3,713.9	$3,988.4	$4,490.6
Expenditures, Total	$2,241.6	$2,477.6	$2,772.3	$3,299.5	$3,695.9	$3,780.9	$3,639.0	$3,956.2	$4,566.8	$4,619.1
					(Percents of Total)					
Revenue, Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Miscellaneous Non-tax Revenue	3.7	5.0	3.3	4.1	5.9	4.1	4.6	4.7	3.4	5.6
Federal Aid	32.5	30.1	29.0	29.6	30.5	31.7	27.6	27.8	28.7	29.7
Taxes, Total	63.8	64.9	67.7	66.3	63.6	64.2	67.9	67.5	67.9	64.6
Total Sales & Usage	26.1	26.9	27.1	26.1	24.0	23.7	24.7	25.2	25.2	24.9
Coal Severance	4.3	4.8	4.8	5.1	5.4	5.3	6.7	5.4	4.8	4.6
Motor Vehicle Fuel	8.3	7.9	7.2	6.5	5.8	5.3	5.7	5.1	4.8	4.4
Motor Vehicle Registration	1.5	1.4	1.3	1.2	1.1	1.0	1.0	1.5	1.3	1.2
License and Privilege	0.9	0.8	0.9	0.9	0.9	1.4	1.6	1.7	2.1	1.2
Income, Individual	13.8	14.6	14.8	15.0	15.5	16.8	17.0	17.4	17.8	17.3
Income, Corporate	6.4	5.7	5.2*	5.4	4.9	4.6	4.7	4.6	5.0	4.7
Property	1.8	1.9	5.6*	5.3	5.4	5.3	5.6	5.5	5.8	5.2
Inheritance and Estate	0.8	0.8	0.8	0.7	0.7	0.8	0.8	1.0	1.1	1.1
Expenditures, Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
General Government	18.1	19.0	17.3	15.7	14.7	14.2	13.1	12.9	12.7	13.6
Education and Humanities	23.9	23.6	27.9	26.7	26.6	27.5	28.9	31.6	29.6	30.1
Human Resources	24.1	24.5	23.8	22.6	23.2	25.4	26.4	24.5	23.7	25.6
Transportation	20.6	17.6	18.0	20.2	21.2	19.3	17.0	15.6	17.0	17.1
Capital Projects	5.8	6.2	4.3	4.6	4.4	3.1	2.8	3.1	3.3	2.4
Debt Service	1.9	3.7	2.6	3.7	3.4	3.4	4.1	5.0	6.0	3.6
Other	5.5	5.5	6.1	6.5	6.6	7.1	7.6	7.3	7.5	7.6

*Local school property tax redefined to be a state tax.

Source: Same as Table 14-A.

TABLE 14-E

Revenue and Expenditures, Totals and Major Components, as Index Numbers, Kentucky State Government, Fiscal Years 1976-1985 (1980 = 100)

Revenue and Expenditure Components	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985
					(Millions of Dollars)					
Revenue, Total	$2,115.1	$2,321.7	$2,643.0	$3,032.3	$3,270.7	$3,401.4	$3,529.9	$3,713.9	$3,988.4	$4,490.6
Expenditures, Total	$2,241.6	$2,477.6	$2,772.3	$3,299.5	$3,695.9	$3,780.9	$3,639.0	$3,956.2	$4,566.8	$4,619.1
					(Index Numbers: 1980 = 100)					
Revenue, Total	64.7	71.0	80.8	92.7	100.0	104.0	107.9	113.6	121.9	137.3
Federal Aid	68.9	70.1	76.9	90.1	100.0	108.1	97.5	103.5	114.7	133.8
Taxes, Total	64.9	72.4	86.0	96.7	100.0	105.0	115.2	120.6	130.3	139.6
Total Sales & Usage	70.4	79.9	91.3	101.2	100.0	102.8	111.2	119.6	128.5	143.0
Coal Severance	51.6	63.8	72.4	87.1	100.0	101.4	134.9	114.4	108.8	117.6
Motor Vehicle Fuel	92.4	96.8	100.0	104.3	100.0	94.9	106.2	99.8	101.1	102.8
Motor Vehicle Registration	90.1	92.0	99.1	100.7	100.0	100.4	102.4	159.1	150.3	153.5
License and Privilege	63.2	65.1	77.5	90.7	100.0	161.2	188.7	216.2	287.7	176.2
Income, Individual	57.8	66.9	77.1	90.2	100.0	113.3	118.8	127.9	140.5	153.5
Income, Corporate	84.9	82.6	87.3	102.8	100.0	97.4	105.0	108.4	124.8	133.0
Property	21.1	24.6	83.4*	91.3	100.0	101.9	111.0	115.0	129.9	132.8
Inheritance and Estate	70.5	82.5	93.8	97.6	100.0	121.6	127.1	164.5	183.7	218.8
Expenditures, Total	60.7	67.0	75.0	89.3	100.0	102.3	98.5	107.0	123.6	125.0
General Government	74.8	86.7	88.1	95.5	100.0	98.5	88.0	93.9	106.4	115.6
Education and Humanities	54.5	59.3	78.7	89.6	100.0	105.8	106.8	126.9	137.5	141.5
Human Resources	63.0	70.6	76.9	86.7	100.0	111.8	112.1	113.1	125.9	137.7
Transportation	59.1	55.8	63.8	85.2	100.0	93.5	79.2	78.8	99.1	100.8
Capital Projects	81.1	84.8	73.5	94.1	100.0	73.3	62.7	77.0	92.6	69.2
Debt Service	33.3	73.4	57.4	97.4	100.0	103.3	120.1	157.7	220.8	132.4
Other	50.5	56.4	70.3	88.9	100.0	110.3	114.9	119.6	146.9	145.3

*Local school property tax redefined to be a state tax.

Source: Same as Table 14-A.

tire period from 1976 through 1985 and especially since 1980. The relative importance of debt service was low in 1976, high in 1982-84, and noticeably low in 1985. Decreased relative importance occurred generally over the ten year period for general government, capital projects, and transportation. The relative importance of transportation averaged 19.5 percent in the first five years but only 17.2 in the last five years.

Table 14-E, while based on the same data as Table 14-D, compares the revenue and expenditure categories over the ten year period according to changes as measured by index numbers (1980 = 100). Most relevant are comparisons of individual parts with totals and comparisons between the parts. Of special interest are changes since 1980. The largest revenue increases since 1980 occurred in license and privilege taxes, the individual income tax, inheritance and estate taxes, and the motor vehicle registration tax. All of these taxes had larger 1985 index values than did either total revenue (137.3) or total tax revenue (139.6). The corporation income tax increased slowly until the sizeable increase in 1984-85. The coal severance tax performed much better after 1980 than before, but the tax was much less important in 1983-84 than in its recent peak year of 1982. Especially slow growth characterized the motor vehicle fuel tax over the entire ten year period, with the index values increasing only ten points between 1976 and 1985. While motor vehicle registration tax revenue increased substantially as a percentage of total revenue between 1983 and 1985, the motor vehicle fuel tax is several times larger than the registration tax in total yield. The two motor vehicle taxes combined showed only modest growth over the period.

The index values for total expenditures shown in Table 14-E more than doubled between 1976 and 1985, although modest growth and some decline occurred in the period 1980 through 1983. Among the expenditure categories, largest growth occurred in education and humanities, human resources, and debt service. There was little if any sustained growth in the capital projects category. But the prize for slow growth among expenditure categories goes to transportation, with index values below 100 in 1981 through 1984 and only 100.8 in 1985. Thus, expenditures for public transportation have plateaued or actually declined since 1979.

Looking broadly at the revenue and expenditure performance of Kentucky state government generally and transportation financing particularly, the sluggish performance of the Kentucky economy since the late 1970s (as described in this and previous *Annual Economic Reports*) is reflected in a changed emphasis among expenditure categories. Whereas expenditures increased in relative importance in education and humanities and human resources, expenditures declined in relative importance in transportation and general government. In Table 14-D, for example, the combined shares of transportation and general government were 38.7 percent in 1976 but only 30.7 percent in 1985, a *decline* of 8 percentage points. In contrast, the combined shares for education and humanities and human resources increased from 48 percent in 1976 to 55.7 percent in 1985, an *increase* of 7.7 percentage points. Similarly in Table 14-E, the average of index values for transpor-

tation and general government was 67.0 in 1976 and 108.2 in 1985, an increase of 41.2 points. In contrast, the average of index values for education and humanities and human resources was 58.8 in 1976 and 139.6 in 1985, an increase of 80.8 points.

FIGURE 14-A

Expenditure Components, Kentucky State Government, Fiscal Year 1985

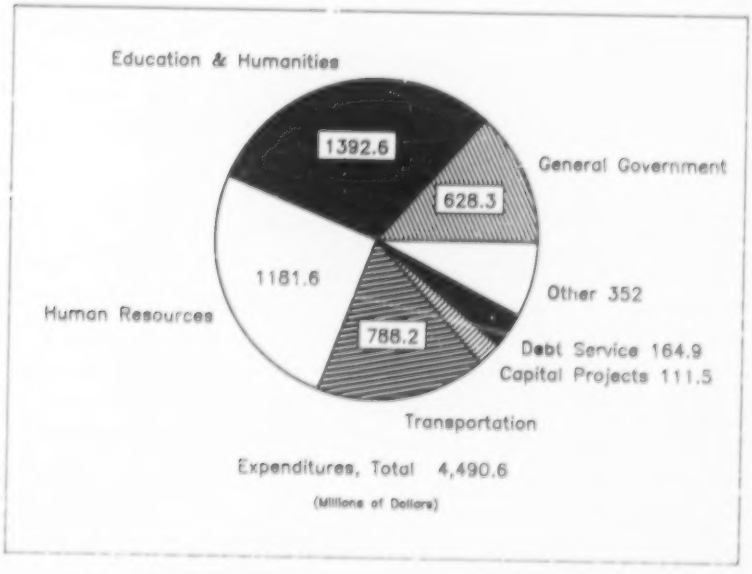


FIGURE 14-B

Revenue Components, Kentucky State Government, Fiscal Year 1985

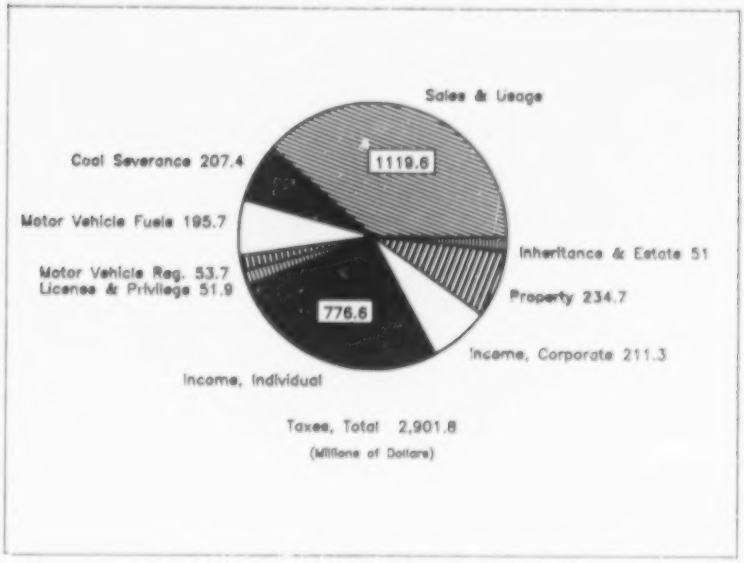
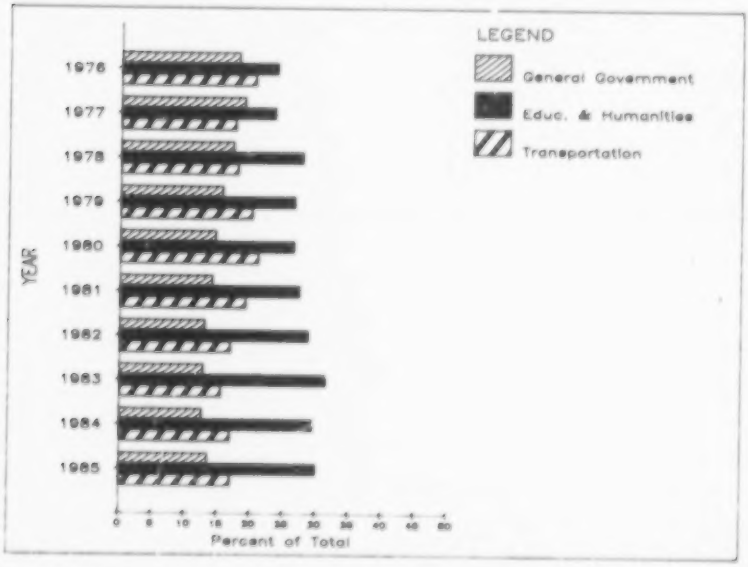


FIGURE 14-C

Selected Expenditure Components as a Percent of Total, Kentucky State Government, Fiscal Years 1976-1985



15. Transportation Finance—Relationships and Trends

Kentucky's apparent recent de-emphasis of highways in state government expenditures, as described in Section 14, is especially important because of the distinctive way in which Kentucky financed its system of modern, high-speed highways beginning in 1960. This system, consisting of the Toll Roads, the Resource Recovery Roads, and the Economic Development Roads, was financed by issuance of debt in which the service costs (interest plus principal retirement) were not expected to be covered by the additional highway user revenue generated from use of the new roads.

The highway finance method common among states is to pay for the cost of building, maintaining, operating, and administering highways from revenue generated from highway user taxes (motor vehicle fuel and license taxes, and sales taxes on motor vehicles and related products) and from federal highway aid which is financed from federal highway user taxes. This financing method essentially charges highway costs to highway users in proportion to their use of the roads (those purchasing and licensing motor vehicles, and burning fuel).

Kentucky used this financing method until 1960 when it embarked upon a large program for building modern, high-speed highways. (Kentucky still finances its other highways by the old method.) Kentucky's new highways were financed substantially without federal aid, and also were not expected to generate enough additional highway user tax revenue (plus toll revenue) to cover the additional costs associated with the new highways. (This is especially true if total costs are viewed as including costs of maintenance, operation, and administration, as well as interest and principal-retirement costs associated with the debt). Consequently, the excess of additional highway costs over additional highway user revenue resulting from the new highways would require diversion from other highway user tax revenue (that is, revenue generated by use of other roads) within the Transportation Fund, or if necessary, diversion from the state's General Fund to its Transportation Fund. Another possibility is that the state's highway system would not be maintained adequately. Also possible, however, is that the new highway system would generate increased economic values throughout the state, which in turn would generate increased tax revenue more than sufficient to pay for the increased costs associated with the new highways.

Financing Kentucky's Toll Roads—An Illustration

Using Kentucky's Toll Roads for illustration, the state's method of highway finance is explained in more detail. (The financing method developed for the Toll Roads also was used to finance the Resource Recovery Roads and the Economic Development Roads.)[1,2] Between 1960 and 1971, the Turnpike Authority of Kentucky issued approximately $870 million of bonds to build Kentucky's Toll Roads. (This excludes the original Kentucky Turnpike between Louisville and Elizabethtown, which was fully paid for from project-generated revenue.) The Turnpike Authori-

ty was created by the legislature and was given power to issue debt and build roads. However, Kentucky's Department of Transportation, under a biennially renewable rental agreement, is responsible for the actual operation of the roads. Servicing of the bonds (payment of interest and retirement of principal) is financed by the biennial rental payment from the Department of Transportation to the Turnpike Authority.

By this innovative financing method, it was legally possible to finance the Toll Roads by issuance of *revenue* bonds instead of *general obligation* bonds and thereby avoid asking the voters for a referendum vote of approval. (See Table 13-F for definitions of these two bond types.) Because the Toll Roads were estimated to generate highway user tax revenue and tolls of only about 40 percent of the debt service costs, an obvious question is how the lenders (bond buyers) were assured of repayment of debt and interest. In the narrow legal sense, a state government does not pledge its full taxing power when issuing revenue bonds but instead pledges only the revenue generated from the project built with the borrowed money. But the financial agreement for the Toll Road bonds was written so that the biennial rental payment became a first claim on the Department of Transportation's use of funds. It is true that the Department is not *legally* required to renew its lease on the Toll Roads every two years. But the unlikelihood that the Department would not renew the lease (which would constitute de facto default on debt issued by an agency of Kentucky state government) was sufficiently convincing to allow the sale of $870 million of bonds to build roads whose estimated revenue-generating ability was only about 40 percent of debt service costs and a much smaller percentage of total highway costs (including maintenance, operation, and administration). Thus, this revenue debt is regarded by the investing public as a claim on the state's full taxing power.[3]

In the years since 1971, when the last of the Toll Roads were financed, Kentucky also has built Resource Recovery Roads and Economic Development Roads, using essentially the same financing method as used for the Toll Roads. Two differences are worth noting. First, no tolls can be charged on the Economic Development Roads. Second, tolls could be charged on the Resource Recovery Roads but in fact, they have been toll free.

Highways and Economic Growth

It is important to consider the possibility that Kentucky's modern high-speed highway system has caused economic growth which might not have occurred in the absence of these roads. Economic growth increased the total of economic values in the state and therefore the revenue yield from the state's tax system, including both general taxes and highway user taxes (motor vehicle fuel and license taxes, and sales taxes on motor vehicles and related products). Thus, it is possible that Kentucky's new highways would be found to be "paying for themselves" if the financing picture were viewed broadly.

Answers to these questions depend upon the success of economic development efforts in increasing economic values in the state, on the one hand, and the ability of the state's tax system to extract tax revenue from increased economic values, on the other hand. Of particular interest is whether the increased tax revenue would be General Fund or Transportation Fund revenue. A period of strong economic growth, accompanied by large increases in state tax revenue, could cause the new highways to be "self-financing," whereas weak economic development or an inefficient tax system could cause the new highways to be a financial drain on state tax revenue that otherwise could be used for other highways or for general government services.

Elsewhere in this *Annual Economic Report*, as well as in previous editions, much analysis of data clearly has shown that Kentucky did experience economic growth at a greater-than-national rate during some of the period of accelerated road building (from the early 1960s to late 1970s). But also shown is a definite slowing of Kentucky's economic progress compared to the national average, with relative decline beginning in the late 1970s. This relative decline is of interest here because of the possibility of less-than-expected increases in the state's tax revenue. Insofar as the increased costs associated with the new highways were not fully covered by increased state revenue, the new highways became a drain on state revenue that otherwise could have been used for other highways or for general government services. Kentucky's recent record in economic growth suggests that since the late 1970s, less-than-expected revenue growth was associated with less-than-expected economic growth.

Aggravating the problem of inadequate tax revenue growth because of slowed economic growth, were weaknesses in the ability of highway user taxes to generate increased revenue during a period of rising prices. A particular problem was the motor vehicle fuel tax *rate* which was defined in cents-per-gallon instead of as a percent of the selling price. Therefore, the tax did not bring increased revenue when petroleum prices increased. This failure of motor vehicle fuel tax revenue to grow in dollar terms as the price of gasoline rose was especially a problem because higher petroleum prices were accompanied by higher prices for the ingredients of highway maintenance, operation, and administration. Consequently, the yield from the major highway user tax (the fuel tax) declined relative to highway costs. Conversion of the fuel tax rate from cents-per-gallon to percentage-of-price came too late—after most of the petroleum price increases had occurred. In addition, the high petroleum prices encouraged greater economy in use of petroleum, which caused relative decline in use of motor vehicles and fuel, and therefore, relative decline in revenue from the entire family of highway user taxes.

In summary, the financial picture for state highways has been a squeezing between available revenues and desired expenditures due to three main factors: the expanded road system's claim on highway user tax revenue generated by the other highways; the slowing of economic growth after the late 1970s; and the insufficient growth of highway user tax revenue. One would expect, therefore, that ex-

amination of data on state revenue, both generally and from highway user taxes, would reveal a relative insufficiency in Kentucky, especially since the late 1970s. One also would expect the relative revenue deficiency to be largest in the Transportation Fund because much of the increased tax revenue from general economic growth goes into the General Fund.

Kentucky's Transportation Fund—An Analysis

Some examination of data was presented in the first part of this section, but additional detailed analysis of the Transportation Fund is needed. Before analyzing additional data, four important points need to be made.

First, the continued reference to "relative inadequacy" of state tax revenue, both generally and for transportation particularly, is not intended to suggest "imminent bankruptcy." The state government has continued over the years to make large and increasing expenditures for general government and for transportation, and the dollars of total tax revenue have continued to increase. Instead, relative inadequacy refers to the squeezing effect of two conflicting forces over a period of years—accelerated cost increases accompanied by less-than-expected revenue increases. *Second*, much of the increased tax revenue that did result from economic growth was from general sales, individual and corporation income, and property taxes that feed the General Fund instead of the Transportation Fund. *Third*, it should be recognized that the innovative financing method for Kentucky's new highways probably would not have caused relative inadequacy of revenue if, as expected, economic growth had been stronger or had lasted longer, and if the large increases in petroleum prices had not occurred. Nevertheless, these two unforeseen and unfortunate events did occur. *Fourth*, possible diversion of General Fund revenue to the Transportation Fund was implicit in the financing method for Kentucky's new highways.

Estimates of Transportation Fund revenue to be generated by use of the Toll Roads included tolls, motor vehicle fuel and license taxes, and sales and usage taxes on motor vehicles and related products. These revenues were estimated to be about 40 percent of the debt service costs.[4] The Toll Road costs not covered by revenues generated from use of the Toll Roads were to be covered by other Department of Transportation resources, and should those be insufficient, from the state's General Fund. That is, 100 percent of the debt service, maintenance, operation, and administration costs of the Toll Roads were to be paid from Department of Transportation resources. (Note that the other new highways were financed in essentially the same manner as were the Toll Roads.) This meant, therefore, that there were essentially three alternative ways to adjust to the inadequate revenues to be generated by the entire system of new highways: (1) divert revenues within the Transportation Fund to the new highways and away from the other roads; (2) spend inadequately for maintenance, operation, and administration of highways

TABLE 15-A

Transportation Fund Revenue Sources as Percents of Total Transportation Fund Revenue, Kentucky State Government, Fiscal Years 1976-1986

Revenue Source	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986
						(Percent)					
Total Transportation Fund Receipts (Other Than Federal Aid)	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Total Tax Revenue	90.5	90.9	91.1	89.4	87.3	88.3	86.9	88.7	90.2	89.9	91.4
Motor Vehicle Fuel Tax, Total	54.9	53.3	49.8	47.9	45.1	44.4	46.6	46.0	44.0	40.6	40.0
Mandatory Use Allocations:											
General Operations	39.7	33.2	31.0	29.8	28.1	24.6	25.9	25.5	24.4	22.6	22.2
Rural Secondary Roads	12.2	11.9	11.1	10.6	10.0	9.8	10.3	10.2	9.8	9.0	8.9
Municipal Aid	0.0	3.0	2.8	2.7	2.5	3.0	3.1	3.1	3.0	2.7	2.9
County Road Aid	3.1	5.3	5.0	4.8	4.5	6.9	7.3	7.2	6.9	6.3	6.2
Motor Vehicle License Tax, Total	10.2	9.6	9.6	9.1	9.4	9.4	9.0	13.8	14.4	15.2	15.6
Passenger Car License	5.8	5.4	5.1	4.7	4.7	4.9	4.6	5.0	3.9	4.3	4.4
Truck License, Permit, and Weight-distance Tax	4.4	4.2	4.5	4.4	4.6	4.5	4.4	8.9	10.4	10.8	11.2
Usage (Sales) Tax	23.8	26.5	28.7	27.5	23.5	22.5	23.8	25.8	28.6	31.0	32.7
Coal Severance Tax	0.0	0.0	1.6	3.5	7.9	10.4	5.0	0.0	0.0	0.0	0.0
All Other Taxes	1.6	1.5	1.4	1.4	1.4	1.6	2.4	3.1	3.2	3.1	3.1
Toll Road Receipts	4.6	4.9	4.7	4.7	4.5	4.7	4.5	4.7	4.5	4.3	4.1
Investment Earnings	3.6	2.9	3.0	4.8	7.0	5.7	7.5	5.6	3.0	3.3	1.9
Miscellaneous Receipts	1.2	1.3	1.2	1.1	1.2	1.3	1.1	0.9	2.2	2.4	2.6

Source: Kentucky Transportation Cabinet.

TABLE 15-B

Changes in Transportation Fund Revenues,
Kentucky State Government, Fiscal Years 1976-1986
(Index Numbers: 1980 = 100)

Revenue Source	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986
Total State Tax Revenue (General and Transportation Funds)	64.9	72.4	86.0	96.7	100.0	105.0	115.2	120.6	130.3	139.6	148.8
Total Transportation Fund Receipts (Other Than Federal Aid)	77.2	83.3	92.2	100.0	100.0	98.1	104.6	103.0	109.7	116.1	117.0
Total Tax Revenue	80.1	86.8	96.3	102.4	100.0	99.3	104.1	104.7	113.5	119.7	122.5
Motor Vehicle Fuel Tax, Total	94.0	98.4	101.8	106.1	100.0	96.5	108.0	105.1	107.1	104.6	103.7
Mandatory Use Allocations:											
General Operations	109.1	98.4	101.8	106.1	100.0	86.1	96.3	93.7	95.5	93.3	92.5
Rural Secondary Roads	94.0	98.4	101.8	106.1	100.0	96.4	107.9	105.0	107.0	104.5	103.6
Municipal Aid	—	98.4	101.8	106.1	100.0	116.4	130.3	126.7	129.2	126.2	125.1
County Road Aid	52.2	98.4	101.8	106.1	100.0	150.5	168.5	163.9	167.1	163.2	161.8
Motor Vehicle License Tax, Total	84.2	85.5	94.2	96.9	100.0	98.2	100.4	151.8	168.5	188.4	194.1
Passenger Car License	94.4	95.7	99.8	99.3	100.0	101.0	102.8	107.9	91.6	106.1	108.7
Truck License Permit and Weight-distance Tax	73.9	75.2	88.5	94.5	100.0	95.3	98.0	196.5	246.7	272.2	281.0
Usage (Sales) Tax	78.2	93.8	112.5	117.0	100.0	94.0	106.0	113.0	133.7	153.2	162.7
Coal Severance Tax	0.0	0.0	19.1	44.5	100.0	129.5	66.6	0.0	0.0	0.0	0.0
Toll Road Receipts	79.3	90.0	96.3	103.2	100.0	101.5	104.3	108.1	110.6	111.5	106.8
Investment Earnings	39.5	34.9	40.0	69.7	100.0	80.2	111.5	82.6	47.0	54.8	30.9
Miscellaneous Receipts	79.9	88.2	90.0	96.1	100.0	109.4	100.8	81.0	203.4	238.0	261.7

Source: Kentucky Transportation Cabinet, and Kentucky Finance and Adminstration Cabinet, *Kentucky Annual Financial Report*, Fiscal Year 1986.

generally; and (3) divert General Fund revenue to the Transportation Fund. Insofar as the General Fund was enlarged because of economic growth, there would need to be no neglect of general government services.

Details on Transportation Fund revenue are presented in Table 15-A as percentages of totals and in Table 15-B as index numbers (1980 = 100). Over the 11-year period 1976 through 1986, four important changes can be seen in Table 15-A. First, motor vehicle fuel tax revenue declined from 54.9 percent of total Transportation Fund revenue in 1976 to only 40 percent in 1986. Second, motor vehicle usage (sales) tax revenue increased between 1976 and 1986 from 23.8 percent to 32.7 percent of total, an increase of 8.9 percentage points. Third, total motor vehicle license tax revenue increased between 1976 and 1986 from 10.2 percent to 15.6 percent of total, an increase of 5.4 points. Thus, the decreased importance of the fuel tax (14.9 points) was offset by the increased importance of usage and license taxes (14.3 points). Fourth, the practice of earmarking motor vehicle fuel tax revenue for spending on particular road types (rural secondary roads, municipal aid, and county road aid) increased in importance, causing fuel tax revenue available for general operations to decline 17.5 points between 1976 and 1986.

Of special interest are the rise and fall of coal severance tax revenue (transferred from the General Fund to the Transportation Fund) in the period 1978 through 1982, and the increased importance of truck-related license revenue in the period 1983 through 1986. Note that legislative changes in the 1986 session are not reflected in these data, especially as regards the increased rate of motor vehicle fuel tax and the reduced emphasis on truck license taxes. Also note that the data in Table 15-A show only percentage-of-total changes and do not concern Transportation Fund revenue changes relative to Kentucky revenue changes generally.

Whether the Transportation Fund revenue changes are larger or smaller than other Kentucky revenue changes can be determined from the Table 15-B comparisons in index number form (1980 = 100). Included for comparison purposes are index numbers for total tax revenue of the combined General and Transportation Funds of Kentucky state government. Of interest is whether particular Transportation Fund index number series have increased at faster or slower rates than the total of the General and Transportation Funds. Also of interest are differences in the degree of change among the various parts of the Transportation Fund. Total tax revenue of the combined General and Transportation Funds increased between 1976 and 1986 by 83.9 percentage points while the similar increase for the Transportation Fund alone was only 39.8 points. The slower-than-average increase in Transportation Fund revenue was especially pronounced in the motor vehicle fuel tax, with the index series increasing between 1976 and 1986 by only 9.7 points. Offsetting the weak increase in fuel tax revenue were relatively large increases in motor vehicle usage tax revenue (84.5 points) and total motor vehicle license tax revenue (109.9 points). Especially interesting is the 207.1 point increase in truck license revenue but only 14.3 point increase in passenger car license

tax revenue in the period 1976 through 1986. Within total fuel tax revenue, which increased by only 9.7 points, the share for general operations *decreased* by 16.6 points over the period 1976 through 1986.

Viewing Tables 15-A and 15-B, together, the picture is one of slow growth in total Transportation Fund revenue relative to the total of General and Transportation Fund revenue and of especially slow growth in motor vehicle fuel tax revenue (both in total and in share for general operations) and in passenger car license revenue. Truck license taxes increased greatly in importance. Of further interest is how the level and changes in transportation financing in Kentucky compare with those in the total of the fifty states. These comparisons are presented in Section 16. Note again that none of the comparisons include financing changes enacted in the 1986 legislative session.

Notes

[1] *A Special Report: The Energy Crisis and the Turnpike Authority of Kentucky Toll Road Revenue Bonds* (Louisville, Kentucky, Municipal Bond Department: Halsey, Stuart & Co. Inc., January 15, 1974).

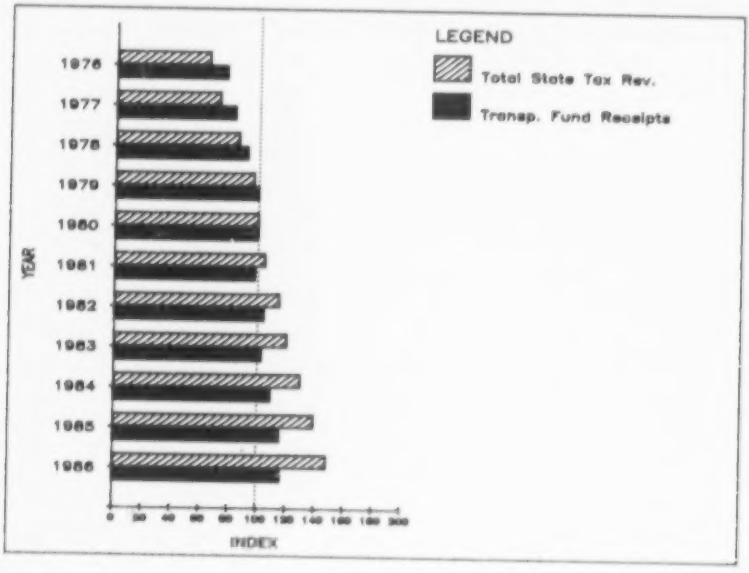
[2] Don M. Soule, "Transportation Financing: Problems and Alternative Solutions," *Kentucky's Future Transportation Needs*, Research Report 122 (Frankfort, Kentucky, Legislative Research Commission, September 1975), pp. D-1 to D-113, and especially pp. D-27 to D-34.

[3] *A Special Report: The Energy Crisis and the Turnpike Authority of Kentucky Toll Road Revenue Bonds*, p. 3.

[4] Ibid., p. 1.

FIGURE 15-A

Growth in Total State Tax Revenue and Transporation Fund Receipts, Kentucky State Government, Fiscal Years 1976-1986 (Index Numbers: 1980 = 100)



16. Interstate Comparison of Highway Finances

U.S. Bureau of the Census data are used to compare selected Kentucky governmental finance data with similar data for the fifty states. For the most part, comparisons are for state plus local governments because of the differences among states in the roles of state and local governments. Both revenue and expenditure data are included. The revenue data are for total taxes and total motor vehicle fuel and license taxes. The expenditure data are for the total, highways, public welfare, total public education, local schools, higher education, and other education. The years covered are 1978 through 1985 in Table 16-A, 1960 through 1985 in Table 16-B, and 1952 through 1985 in Table 16-C.

Motor Vehicle Fuel and License Tax Revenue

Table 16-A compares Kentucky with the total of the fifty states in terms of total tax revenue and total motor vehicle fuel and license tax revenue for the period 1978 through 1985. For each series, both the Kentucky and fifty-state values are shown as index numbers, with 1978 used as the year of reference (1978 = 100). In addition, the Kentucky index values are expressed as percentages of the fifty-state index values to create "relative" index numbers. Comparison of relative index numbers allows easy recognition of changes in Kentucky's position relative to the fifty states. Increasing values for the relative index numbers indicate relative improvement for Kentucky, while decreasing values indicate relative worsening.

TABLE 16-A

Growth of Selected Revenue Sources, State and Local Governments, Kentucky and the Average of the 50 States, Fiscal Years 1978-1985
(Index Numbers: 1978 = 100)

	Kentucky		50-State Average		Kentucky Index/ U.S. Index	
Fiscal Year	Total Tax Revenue	Motor Vehicle Fuel and License Taxes	Total Tax Revenue	Motor Vehicle Fuel and License Taxes	Total Tax Revenue	Motor Vehicle Fuel and License Taxes
1978	100	100	100	100	100	100
1979	112	104	106	106	106	98
1980	117	100	115	105	102	95
1981	125	96	126	108	99	89
1982	135	106	138	115	98	92
1983	142	113	147	119	97	95
1984	154	121	165	135	93	90
1985	166	123	181	147	92	84

Source: U.S. Department of Commerce, Bureau of the Census, *Governmental Finance*, various years. Kentucky data are through the Kentucky Economic Information System.

Because the Table 16-A index values are derived from dollar amounts, general increase over the years is expected because of inflation. Degrees of increase differ, however, between the motor vehicle tax revenue and the total tax revenue series and between the Kentucky and national series. Motor vehicle fuel and license tax revenue has grown at less than the rate for total taxes, for both Kentucky and the nation, indicating that tax support for highway expenditures has not kept pace with tax support for state and local government expenditures generally. This relative worsening for highway tax support was more pronounced in Kentucky than the nation, a relationship most clearly shown by relative index numbers in the last two columns of the table. Kentucky's total tax revenue position improved relative to the nation's in 1979 but declined in all of the following years. For motor vehicle fuel and license tax revenue, Kentucky's relative worsening was even greater, although some reversal occurred in 1982 and 1983.

Government Expenditures for Selected Services

Table 16-B compares per capita values for expenditures in total and for selected services, including highways, public welfare, total public education, and three educational subgroups—local schools, higher education, and other education. Amounts are for Kentucky, with the values shown as percentages of the corresponding values for the fifty states. Because of Kentucky's persistent lower-than-average level of tax revenue per capita, a sensible expectation is that lower-than-average per capita amounts will be found in all Kentucky expenditure categories. This expectation is confirmed in the total expenditure series, in which the Kentucky values are between 70 and 90 percent of the national values. Also below average in all of the 26 years shown are per capita expenditures for public welfare, total public education, and local schools.

Three expenditure categories stand out as unusually high. For highways, higher education, and other education, Kentucky's per capita expenditures (as percentages of the national averages) are above the Kentucky values for total expenditures in nearly every year. But these three series are also above the national averages in many years—highways in all years but 1961, higher education in 9 of the 26 years, and other education in 22 years.

The Table 16-B data clearly show that Kentucky has emphasized highways, higher education, and other education in state and local government expenditures over the period 1960 through 1985. Nevertheless, the degrees of emphasis have changed in recent years. Kentucky highway expenditures per capita, as percentages of the national averages, grew in the period 1975 through 1980 but generally declined thereafter, reaching 102.5 percent in 1985. Some decline occurred for Kentucky higher education, with the 1985 value falling 15.2 percentage points below the value for 1979, the most recent peak year. Generally, similar values for other education have increased since 1980. Between 1984 and 1985, the percentage

TABLE 16-B

Per Capita Expenditures, Selected Types, State and Local Governments, Kentucky and the Average of the 50 States, Fiscal Years 1960-1985 (Kentucky Per Capita Amounts as Percentages of the 50-State Averages)

Fiscal Year	Total	Highways	Public Welfare	Total Public Education	Local Schools	Higher Education	Other Education
1960	68.9%	103.6%	84.2%	67.4%	63.4%	86.3%	70.8%
1961	76.4	87.3	90.9	73.6	71.1	83.2	95.3
1962	91.3	122.4	93.5	81.3	73.6	113.2	93.2
1963	86.5	144.6	91.2	80.7	72.6	110.4	107.6
1964	81.0	118.9	95.0	75.3	65.5	105.8	125.4
1965	80.8	106.0	99.0	75.3	67.9	91.7	164.4
1966	81.5	109.1	99.1	77.1	66.4	97.3	202.3
1967	86.8	121.8	96.1	83.1	71.1	112.6	139.0
1968	88.6	138.4	91.8	81.8	71.1	103.3	139.5
1969	87.3	139.0	86.9	86.4	75.7	113.2	117.7
1970	82.6	118.0	77.4	85.7	75.0	113.8	103.0
1971	78.8	125.2	70.3	81.0	74.6	93.6	108.5
1972	77.1	140.0	67.8	77.0	69.1	95.4	96.2
1973	77.5	138.8	70.9	78.7	69.6	99.8	101.4
1974	75.2	117.5	64.0	78.1	70.2	95.7	100.9
1975	77.0	113.2	75.8	80.1	69.8	98.6	130.1
1976	77.5	118.3	80.8	80.4	68.5	100.6	139.8
1977	79.7	121.5	83.9	81.3	71.8	93.8	148.6
1978	80.0	142.0	76.8	78.9	68.1	95.4	141.9
1979	89.3	176.8	80.8	88.5	78.6	104.2	147.8
1980	91.3	182.7	88.2	86.3	76.7	99.8	153.4
1981	84.3	147.3	87.9	82.3	73.4	94.7	142.7
1982	78.8	119.3	82.4	77.3	68.9	88.6	138.4
1983	78.4	120.9	81.9	82.8	76.4	89.4	142.8
1984	80.7	124.5	81.5	81.8	72.7	93.1	155.2
1985	77.0	102.5	81.0	80.2	71.5	88.9	163.1

Source: Same as Table 14-H.

values declined 22.0 points for highways and 4.2 points for higher education, but increased 7.9 points for other education.

Government Expenditures for Highways

Highway expenditures from 1952 through 1985 are compared in Table 16-C for Kentucky and the fifty states. Both the Kentucky and national series are shown as index numbers (1980 = 100), and Kentucky values also are shown as *relative* index numbers (Kentucky index values as percentages of the national index values).

TABLE 16-C

Growth in Highway Expenditures, State and Local Governments, Kentucky and the Average of the 50 States, Fiscal Years 1952-1985
(Index Numbers: 1980 = 100)

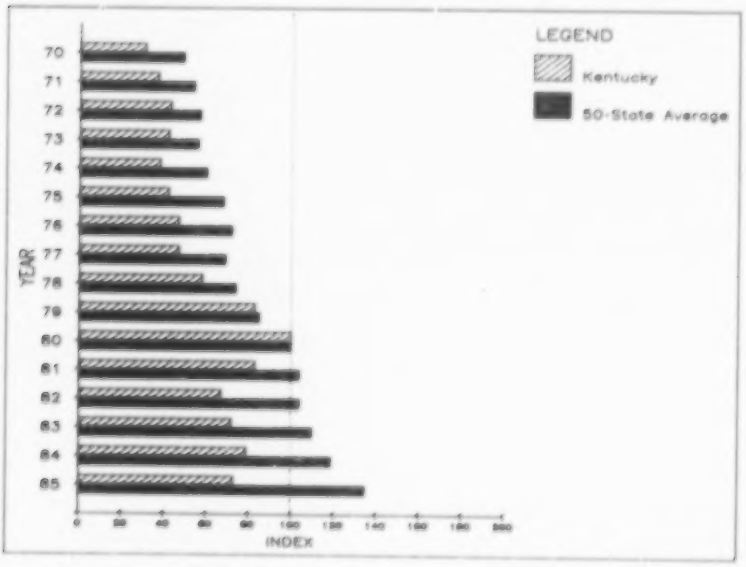
Fiscal	Kentucky	50-State Average	KY Index as a % of the 50-State Index
1952	6	10	62%
1953	7	11	62
1954	8	12	62
1955	8	12	69
1956	9	13	72
1957	9	15	61
1958	10	17	61
1959	17	29	58
1960	17	28	59
1961	15	30	49
1962	21	31	69
1963	27	33	81
1964	23	35	66
1965	21	37	58
1966	23	38	60
1967	28	42	66
1968	33	43	75
1969	35	46	75
1970	31	49	63
1971	37	54	68
1972	43	57	76
1973	42	56	75
1974	38	60	64
1975	42	68	62
1976	47	72	65
1977	47	69	67
1978	58	74	78
1979	83	85	97
1980	100	100	100
1981	83	104	80
1982	67	104	64
1983	72	110	65
1984	79	119	66
1985	73	135	54

Source: Same as Table 14-H.

Between 1952 and 1980, Kentucky's highway expenditure growth was slightly more than the nation's, with the index values increasing from 6 to 100 for Kentucky and 10 to 100 for the nation. But since 1980, the actual dollar levels of highway expenditures have declined in Kentucky while they have increased in the nation. Kentucky's index values *declined* 27 percentage points between 1980 and 1985 while the national index values *increased* 35 points. In terms of the relative index numbers shown in the third column of the table, Kentucky's 1985 value of 54 was the second lowest in the 26-year period and lowest since 1961.

FIGURE 16-A

Growth in Highway Expenditures, State Governments, Kentucky and the 50-State Average, Fiscal Years 1970-1985
(Index Numbers: 1980 = 100)



Glossary

This glossary provides definitions of selected terms and methodological descriptions related to most of the data presented in Parts I through III of the *Annual Economic Report*. It is divided into three sections: (1) Employment Data and the Components of the Labor Force, (2) The Components of Personal Income, and (3) Governmental Finance Data. Other types of data or terms are defined either within the text or as a note, as appropriate.

Employment Data and the Components of the Labor Force

This part of the glossary presents two types of employment data: 1) Bureau of Labor Statistics (BLS) labor force estimates and 2) Bureau of Economic Analysis (BEA) estimates of employment by industry. BLS estimates for Kentucky are produced in cooperation with the Kentucky Cabinet for Human Resources. The material presented for the labor force estimates is taken from the Explanatory Notes of the monthly, *Employment and Earnings*, published by BLS. The material for employment by industry estimates is from conversations with several of the staff of the BEA. Their assistance is gratefully acknowledged.

LABOR FORCE COMPONENTS: LABOR FORCE, EMPLOYMENT, UNEMPLOYMENT, UNEMPLOYMENT RATE, AND LABOR FORCE PARTICIPATION RATE. National data based on household interviews are obtained from a sample survey of the population 16 years of age and over, the Current Population Survey (CPS). The CPS is conducted each month by the Bureau of the Census for the Bureau of Labor Statistics and provides comprehensive data on the labor force, the employed, and the unemployed. The survey has coverage in the 50 states and the District of Columbia and is based on activity or status reported for the calendar week including the 12th day of the month. The estimates for the 11 largest states are taken directly from the monthly CPS; however for the remaining 39 states, including Kentucky, these estimates are prepared in several stages. For a complete description of this methodology, consult the *BLS Manual for Developing Local Area Unemployment Statistics*.

Persons with multiple jobs are classified according to the job at which they worked the most hours during the survey week. These data are residence-based.

LABOR FORCE. The sum of the employed and unemployed persons. The civilian labor force excludes members of the Armed Forces stationed in the United States.

EMPLOYED PERSONS. All persons who, during the survey week, did any work at all as paid employees, in their own business, profession, or on their own farm, or who worked 15 hours or more as unpaid workers in an enterprise operated by a member of the family; and, all those who were not working but who had jobs or businesses from which they were temporarily absent because of illness, bad weather, vacation, labor-management disputes, or personal reasons, whether they were paid for the time off or were seeking other jobs.

UNEMPLOYED PERSONS. All persons who had no employment during the survey week, were available for work, except for temporary illness, and had made specific efforts to find employment sometime during the prior 4 weeks, or were waiting to be recalled to a job from which they had been laid off, or were waiting to report to a new job within 30 days.

UNEMPLOYMENT RATE. The number of unemployed persons as a percent of the civilian labor force.

LABOR FORCE PARTICIPATION RATE. The proportion of the civilian labor force to the civilian noninstitutional population, 16 years of age and older.

EMPLOYMENT BY INDUSTRY. BEA's employment estimates represent all jobs in a particular category and geographic area. Full- and part-time jobs are included, and both proprietory (self-employment) and wage and salary jobs are estimated. From the "job-count" perspective of BEA's estimates, a person holding more than one job may be counted as both a wage and salary worker and self-employed, and may be counted in two or more industries. In deriving its comprehensive job-count employment estimates, BEA relies on estimates and administrative records of numerous statistical agencies. The estimates are based on place of work, which may be different from the place of residence for persons holding jobs. Industry categories are according to the Standard Industrial Classification (SIC) codes. Estimates of total employment include proprietors as well as wage and salary employment.

WAGE AND SALARY EMPLOYMENT. In addition to jobs for which compensation is in the form of wages or salaries, wage and salary employment includes jobs for which compensation is exclusively or primarily in the form of tips, commissions, etc.

NONFARM WAGE AND SALARY EMPLOYMENT. The primary source for BEA's estimates of private nonfarm wage and salary employment is the Bureau of Labor Statistic's ES-202 program for employment covered by unemployment insurance (UI) programs. Supplementary information is used to estimate employment not included in the estimates of UI covered employment. Sources for supplementary information include the *Census of Population*, the American Association of Railroads, *County Business Patterns*, and records of religious associations. Estimates of government employment include government enterprises (e.g. the U.S. Postal Service, public schools, municipal parking lots). That is, employment by government enterprises is included with the government sector rather than with the industrial counterparts of the private sector.

FARM WAGE AND SALARY EMPLOYMENT. Farm wage and salary employment includes hired farm labor and officers of corporate farms. It does not include unpaid farm labor. Estimates are based primarily on quarterly surveys conducted by the U.S. Department of Agriculture. Census of Agriculture base line data and the results of surveys of farm wages are used to disaggregate national and regional results of the USDA employment survey.

PROPRIETORS. Proprietors, or self-employed persons, are defined to include sole proprietors and active partners in partnerships.

NONFARM PROPRIETORS. For nonfarm proprietors, at the national level, data from the Internal Revenue Service's business tax returns are used to generate industrially-detailed estimates. At the state level, social security records on individuals making self-employment contributions are used for preliminary estimates. These are adjusted to the national totals to provide final state-level estimates.

FARM PROPRIETORS. Estimates of farm proprietors are based on counts of the numbers of farms with adjustments for corporate farms (subtractions) and partnership farms (additions).

The Components of Personal Income

This part of the glossary provides an overview of the components of personal income and is organized in a manner intended to highlight each component and then its subcomponent(s). These definitions are taken from: U.S. Department of Commerce, Bureau of Economic Analysis, *State Personal Income: Estimates for 1929-83 and a Statement of Sources and Methods* (Washington, D.C.: U.S. Government Printing Office) 1984 and *Survey of Current Business*, August 1986.

PERSONAL INCOME. Personal Income is the income received by persons from all sources, that is from participation in production, from both government and business transfer payments, and from government interest. Personal income is the sum of Wage and Salary Disbursements, Other Labor Income, Proprietors' Income, Rental Income of Persons, Personal Dividend Income, Personal Interest Income, and Transfer Payments, less Personal Contributions for Social Insurance. Persons are defined as individuals, nonprofit institutions, private noninsured welfare funds, and private trust funds. The last three are referred to as "quasi-individuals" and make up only a small part of the total number of persons.

PER CAPITA PERSONAL INCOME. This is total personal income of the residents of a given area divided by the resident population of the area. Midyear (July 1) estimates of population are used (prepared by the Bureau of the Census), although income is measured as a flow over the year.

WAGES AND SALARIES. Wages and Salaries are defined as the monetary remuneration of employees, including compensation of corporate officers; commissions, tips and bonuses; and receipts-in-kind that represent income to the recipients. They are measured before such deductions as social security contributions and union dues. The term "disbursements" used in conjunction with wages and salaries indicates that retroactive wages and salaries are counted when paid rather than when earned.

PRIVATE NONFARM WAGES AND SALARIES. Approximately 95 percent of Private Nonfarm Wages and salaries are derived from tabulations by the State employment security agencies from their State employment security reports (form ES-202), as part of the administration of the State unemployment insurance (UI) contribution program. To these UI-based data, which do not precisely meet the statistical and conceptual requirements of the personal income estimates, BEA makes some adjustments and additions, primarily a conversion from a place-of-work basis to a place-of-residence basis. (See discussion of the Residence Adjustment, below.) In addition, BEA supplements the UI-based data for some industries, for elements of UI-covered industries that remain outside the scope of the UI program, and for the five industries that are treated as noncovered (railroad transportation, private households, private educational services, membership organizations, and "other").

GOVERNMENT NONFARM WAGES AND SALARIES. The estimates of Government Wage and Salary Disbursements include payrolls of federal civilian, federal military, state education, state government excluding education, local education, and local government excluding education, and of governmental enterprises. These latter are government activities in which the operations are financed primarily by the sales of goods or services to the public rather than by general revenues.

FARM WAGES AND SALARIES. This component of Personal Income is measured as the sum of cash wages of hired farm labor, the pay-in-kind of hired farm labor, and the salaries of officers of corporate farms. This estimate is similar to the U.S. Department of Agriculture's state estimates of farm labor expenses, in that both measures (BEA's and USDA's) exclude payments for contract labor. In the BEA estimates contract labor is included with wages and salaries in agricultural services. The USDA estimates also exclude the salaries of officers of corporate farms.

OTHER LABOR INCOME. This component of Personal Income consists of employer contributions to privately administered pension and welfare funds and of a few small items, including directors' fees, compensation of prison inmates, and miscellaneous judicial fees.

PROPRIETORS' INCOME. This component of Personal Income is the income, including income-in-kind, of sole proprietorships, partnerships, and of tax-exempt cooperatives. Dividends and monetary interest received by proprietors of nonfinancial businesses and rental income received by persons not primarily engaged in the real estate business are excluded; these incomes are included in Dividends, Net Interest, and Rental Income of Persons, respectively (see below).

PERSONAL CONTRIBUTIONS FOR SOCIAL INSURANCE. These contributions, which are subtracted from income to derive Personal Income, consist of payments by employees, self-employed, and other individuals who participate in the following programs: federal old-age, survivors, disability, and hospital insurance; supplementary medical insurance; State unemployment insurance; railroad retirement insurance; government retirement; and veterans life insurance.

PERSONAL DIVIDEND INCOME. This component of Personal Income measures the dividends received by persons from all sources. Dividends are payments in cash or in other assets, excluding stock, by corporations organized for profit to noncorporate stockholders who are U.S. residents.

PERSONAL INTEREST INCOME. This component of Personal Income is the interest income of persons from all sources. In addition to monetary interest flows, personal interest income includes flows of interest-in-kind (imputed interest).

RENTAL INCOME OF PERSONS. This component of Personal Income is the monetary income of persons from the rental of real property (excluding the income of persons primarily engaged in the real estate business), the imputed gross rental value of owner-occupied nonfarm dwellings, and the royalties received by persons from patents, copyrights, and rights to natural resources.

TRANSFER PAYMENTS. This component of Personal Income measures payments to persons for which they do not render current services. Generally, they are paid in monetary form. At the State level, approximately 90 percent of transfer payments are measured on the basis of directly reported data; the remaining 10 percent are estimated on the basis of indirect, but generally reliable, data. The major categories of transfer payments include: Government Payments to Individuals, Business Payments to Individuals, and Payments to Nonprofit Institutions.

> **GOVERNMENT PAYMENTS TO INDIVIDUALS.** Included in this category are: Retirement, Disability, and Health Insurance Benefit Payments; Unemployment Insurance Benefit Payments; Federal Education and Training Assistance Payments; Income Maintenance Benefit Payments; Veterans Benefit Payments; and Other Payments to Individuals. Also included are government reimbursements to the providers of goods and services to individuals.
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> **BUSINESS TRANSFER PAYMENTS.** Business Transfer Payments to individuals include allowances for consumer bad debts, cash prizes, auto liability payments for personal injury, medical malpractice liability payments, railroad and miscellaneous liability payments, losses due to forgery, and unrecovered thefts.
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> **PAYMENTS TO NONPROFIT INSTITUTIONS.** These include Federal Government Payments such as to private nonprofit hospitals for construction and, as part of Federal scholarships, to private educational institutions for the educational cost portion; State and Local Government Payments for foster home care, educational assistance payments to nonprofit institutions, and other payments; and Business Payments to nonprofit institutions in the form of corporate gifts of money, securities, or real property.

RESIDENCE ADJUSTMENT. This is the adjustment that is made to Wages and Salaries, Other Labor Income, and Personal Contributions for Social Insurance (with minor exceptions) to place them on a where-received basis. The adjustment is necessary because the components of Personal Income are estimated from data that are reported by point of disbursement (place of work). Essentially, the State Residence Adjustment is the sum of the county residence adjustments. The amount of the residence adjustment for each county is the total inflows of labor income of intercounty commuters minus the total outflows. These flows are calculated as the product

of labor income in the county of work multiplied by a residence adjustment factor, which is the ratio of the wages of workers who work in the county but reside in another county (in-commuters) to the total wages of all employees working in the county (residents and nonresidents). The residence adjustment factors are computed at decade intervals, based upon commuting information from the decennial census.

Governmental Finance Data

This glossary provides definitions of selected terms used by the U.S. Department of Commerce, Bureau of the Census, in its annual publication *Governmental Finances*. *Governmental Finances* is the primary source for most of the analysis included in Part III of the *Commonwealth of Kentucky Annual Economic Report—1986*. The definitions are in alphabetical order; in a few cases, such as with Sales and Gross Receipts Taxes, subcategories of a definition follow the definition rather than appearing in strictly alphabetical order.

CAPITAL OUTLAY. Direct expenditure for contract or force account construction of buildings, roads, and other improvements, and for purchase of equipment, land, and existing structures. Includes amounts of additions, replacements, and major alterations to fixed works and structures. However, expenditure for repairs to such works and structures is classified as current operation expenditure.

CASH ASSISTANCE. Payments to needy persons under the categorical programs. See *Public Welfare*.

CATEGORICAL ASSISTANCE PROGRAMS. Old Age Assistance, Aid to Families With Dependent Children, Aid to Blind, Aid to Disabled. See *Public Welfare*.

NON-TAX REVENUE. General revenue other than taxes and intergovernmental revenue.

CORRECTION. Confinement and correction of adults and minors convicted of offenses against the law, and pardon, probation, and parole activities.

CORRECTIONAL INSTITUTIONS. Prisons, reformatories, houses of correction, and other institutions for the confinement and correction of convicted persons and juveniles. Includes only expenditures for institutions operated by the government concerned; excludes cost of maintaining prisoners in institutions of other governments.

DEBT. All long-term credit obligations of the government and its agencies whether backed by the government's full faith and credit or nonguaranteed, and all interest-bearing short-term credit obligations. Includes judgments, mortgages, and revenue bonds, as well as general obligation bonds, notes, and interest-bearing warrants. Excludes noninterest-bearing short-term obligations, interfund obligations, amounts owed in a trust or agency capacity, advances and contingent loans from other governments, and rights of individuals to benefits from government-administered employee retirement funds. Refunding of Long-Term Debt is the issuance of long-term obligations in exchange for, or to finance the retirement of, outstanding long-term debt, generally to obtain more favorable interest rates.

DEBT OUTSTANDING. All debt obligations remaining unpaid on the date specified.

DIRECT EXPENDITURE. Payments to employees, suppliers, contractors, beneficiaries, and other final recipients of government payments—i.e., all expenditure other than *Intergovernmental Expenditure*.

EDUCATION. Provision or support of schools and facilities for elementary and secondary, higher, and other education. Elementary and Secondary Education includes the provision of public kindergarten through high school education by State and local governments. It encompasses instructional, support, and auxiliary services (school lunch, student activities, and community services) offered by public school systems. Revenues and expenditures for enterprise activities are included on a gross basis. Higher Education consists of all State and local institutions of higher education. Excluded are agricultural experiment stations and agricultural extension services (included under *Natural Resources*), university-operated hospitals (included under *Hospitals*), and scholarship and fellowship payments (included under *Other Education*). Other Education includes all Federal Government educational activities with the exception of service academies (which are classified as part of *National Defense and International Relations*), State government administrative supervision of elementary and secondary and higher education, scholarship and fellowship payments, aid to private schools, and support of special schools for deaf, blind, and other handicapped persons.

EXPENDITURE. All amounts of money paid out by a government—net of recoveries and other correcting transactions—other than for retirement of debt, investment in securities, extension of credit, or as agency transactions. Note that expenditure includes only external transactions of a government and excludes non-cash transactions such as the provision of perquisites or other payments in kind.

FEDERAL AID.

Intergovernmental Revenue. Amounts received from other governments as fiscal aid in the form of shared revenues and grants-in-aid, as reimbursements for performance of general government functions and specific services for the paying government (e.g., care of prisoners or contractual research), or in lieu of taxes. Excludes amounts received from other governments for sale of property, commodities, and utility services. All intergovernmental revenue is classified as general revenue.

Intergovernmental Expenditure. Amounts paid to other governments as fiscal aid in the form of shared revenues and grants-in-aid, as reimbursements for performance of general government activities and for specific services for the paying government, or in lieu of taxes. Excludes amounts paid to other governments for purchase of commodities, property, or utility services, any tax imposed and paid as such, and employer contributions for social insurance--e.g., contributions to the Federal Government for old-age, survivors', disability, and health insurance for government employees.

FINANCIAL ADMINISTRATION. Officials and agencies concerned with tax assessment and collection, accounting, auditing, budgeting, purchasing, custody of funds, and other central finance activities.

FISCAL YEAR. The 12-month period at the end of which the government or any governmental agency determines its financial condition and the results of its operations and closes its books.

GENERAL CONTROL. Judicial and legal branch which includes courts and activities associated with courts including law libraries, prosecutorial and defendant programs, probate functions, and juries. Also, other governmental administration which includes activities of the governing body, office of the chief executive, and central staff services and agencies concerned with personnel administration, recording, planning, zoning, and the like.

GENERAL EXPENDITURE. All government expenditure other than the specifically enumerated kinds of expenditure classified as utility expenditure, liquor stores expenditure, and employee-retirement or other insurance trust expenditures.

GENERAL REVENUE. All government revenue except utility revenue, liquor store revenue and employee-retirement and other insurance trust revenue. The basis for distinction is not the fund or administrative unit receiving particular amounts, but rather the nature of the revenue sources concerned. Includes all tax collections and intergovernmental revenue, even if designated for employee-retirement or local utility purposes.

GENERAL REVENUE SHARING TAX. Funds distributed to local general purpose governments by the Federal Government under the State and Local Fiscal Assistance Act of 1972. Program ceased September 30, 1986.

HEALTH. Out-patient health services, other than hospital care, including: public health administration; research and education; categorical health programs; treatment and immunization clinics; nursing; environmental health activities such as air and water pollution control; ambulance service if provided separately from fire protection services; and other general public health activities such as mosquito abatement. Also includes financing, construction, and operation of nursing homes. School health services provided by health agencies (rather than school agencies) are included here. Sewage treatment operations are classified under *Sewerage*.

HIGHWAYS. Construction, maintenance, and operation of highways, streets, and related structures, including toll highways, bridges, tunnels, ferries, street lighting, and snow and ice removal. However, highway policing and traffic control are classed under *Police Protection*.

HOSPITALS. Financing, construction, acquisition, maintenance or operation of hospital facilities, provision of hospital care, and support of public or private hospitals. However, see *Public Welfare* concerning vendor payments under welfare programs.

HOUSING AND COMMUNITY DEVELOPMENT. Construction and operation of housing and redevelopment projects, and other activities to promote or aid housing and community development.

INDIVIDUAL INCOME TAXES. Taxes on individuals measured by net income and taxes distinctively imposed on special types of income (e.g., interest, dividends, income from intangibles, etc.).

INSURANCE TRUST SYSTEM. A government-administered program for employee retirement and social insurance protection relating to unemployment compensation, workmen's compensation, Old Age, Survivors', Disability, and Health Insurance, and the like. Insurance Trust Revenue comprises amounts from contributions required of employers and employees for financing these social insurance programs, and earnings on assets of such systems. Insurance Trust Expenditure corresponds with the character and object category, Insurance Benefits and Repayments, and comprises only cash payments to beneficiaries (including withdrawals of contributions). These categories exclude costs of administering insurance trust systems, which are classed as general expenditure. Insurance trust revenue and expenditure do not include any contributions of a government to a system it administers. Any amounts paid by a government as employer contributions to an insurance trust system administered by another government are classed as general expenditure for current operation, and as insurance trust revenue of the particular system and receiving government.

INTEREST EXPENDITURE. Amounts paid for use of borrowed money. Interest on utility debt is included in *Utility Expenditures*.

LICENSE TAXES. Taxes exacted (either for revenue raising or for regulation) as a condition to the exercise of a business or non-business privilege, at a flat rate or measured by such bases as capital stock, capital surplus, number of business units, or capacity. Excludes taxes measured directly by transactions, gross or net income, or value of property except those to which only nominal rates apply. "Licenses" based on these latter measures, other than those at nominal rates, are classified according to the measure concerned. Includes "fees" related to licensing activities—automobile inspection, professional examinations and licenses, etc.—as well as license taxes producing substantial revenues.

LIQUOR STORE EXPENDITURE. Expenditures for purchase of liquor for resale and provision and operation of liquor stores. Excludes expenditure for law enforcement and licensing activities carried out in conjunction with liquor store operations.

LIQUOR STORE REVENUE. Amounts received from sale of liquor by government liquor stores and other revenue from government liquor store operations. Excludes any taxes collected by government liquor monopoly systems.

LONG-TERM DEBT. Debt payable more than 1 year after date of issue.

NATURAL RESOURCES. Conservation, promotion, and development of natural resources, such as soil, water, forests, minerals, and wildlife. Includes irrigation, drainage, flood control, forestry and forest fire protection, soil reclamation, soil and water conservation, fish and game programs, and agricultural fairs. For the Federal Government, includes agricultural experiment stations and extension

services, farm price stabilization programs, farm insurance and credit activities, and multipurpose power and reclamation projects.

PARKS AND RECREATION. Provision and support of recreational and cultural-scientific facilities and activities including golf courses, playfields, playgrounds, public beaches, swimming pools, tennis courts, parks, auditoriums, stadiums, auto camps, recreation piers, marinas, botanical gardens, galleries, museums, and zoos. Also includes building and operation of convention centers and exhibition halls.

POLICE PROTECTION. Preservation of law and order and traffic safety. Includes police patrols and communications, crime prevention activities, detention and custody of persons awaiting trial, traffic safety, and vehicular inspection.

PROPERTY TAXES. Taxes conditioned on ownership of property and measured by its value. Includes general property taxes related to property as a whole, real and personal, tangible or intangible, whether taxed at a single rate or at classified rates; and taxes on selected types of property, such as motor vehicles or certain or all intangibles.

PUBLIC WELFARE. Support of and assistance to needy persons contingent upon their need. Excludes pensions to former employees and other benefits not contingent on need. Expenditures under this heading include: *Cash Assistance Payments* paid directly to needy persons under the categorical programs (Old Age Assistance, Aid to Families with Dependent Children, Aid to the Blind, and Aid to the Disabled) and under any other welfare programs; *Vendor Payments* made directly to private purveyors for medical care, burials, and other services provided under welfare programs; and provision and operation by the government of *Welfare Institutions*. Other *Public Welfare* includes payments to other governments for welfare purposes, amounts for administration, support of private agencies, and other public welfare services. Health and Hospital services provided directly by the government through its own hospitals and health agencies, and any payments to other governments for such purposes are classed under those functional headings rather than here.

REVENUE. All amounts of money received by a government from external sources—net of refunds and other correcting transactions—other than from issuance of debt, liquidation of investments, and as agency and private trust transactions. Note that revenue excludes noncash transactions such as receipt of services, commodities, or other "receipts in kind."

SALARIES AND WAGES. Amounts expended for compensation of employees. Consists of gross amounts without deduction of withholdings for income tax, social security, or retirement coverage.

SALES AND GROSS RECEIPTS TAXES. Taxes, including "licenses" at more than nominal rates, based on volume or value of transfers of goods or services, upon gross receipts, or upon gross income; and related taxes based upon use, storage, production (other than severance of natural resources), importation, or consumption of goods. Dealer discounts of "commissions" allowed to merchants for collection of taxes from consumers are excluded. Comprises:

> **GENERAL SALES OR GROSS RECEIPTS TAXES.** Sales or gross receipts taxes which are applicable with only specified exceptions to all types of goods and services, or all gross income, whether at a single rate or at classified rates. Taxes imposed distinctively upon sales or gross receipts from selected commodities, services, or businesses are reported separately under category listed below.
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> **SELECTIVE SALES AND GROSS RECEIPTS TAXES.** Sales and gross receipts taxes imposed on sales of particular commodities or services or gross receipts of particular businesses, separately and apart from the application of general sales and gross receipts taxes. Specific taxes on items such as alcoholic beverages or tobacco products are examples.

SEVERANCE TAXES. Taxes imposed distinctively on removal of natural products (e.g., oil, gas, other minerals, timber, fish, etc.) from land or water and measured by value or quantity of products removed or sold.

TAXES. Compulsory contributions exacted by a government for public purposes, except employee and employer assessments for retirement and social insurance purposes, which are classified as insurance trust revenue. All tax revenue is classified as general revenue and comprises amounts received

(including interest and penalties but excluding protested amounts and refunds) from all taxes imposed by a government. Note that local government tax revenue excludes any amounts from shares of state-imposed and collected taxes, which are classified as intergovernmental revenue.

UTILITY. A government owned and operated water supply, electric light and power, gas supply, or transit system. Government revenue, expenditure, and debt relating to utility facilities leased to other governments or persons, and other commercial type activities of governments, such as port facilities, airports, housing projects, radio stations, steam plants, ferries, abattoirs, etc., are classified as general government activities.

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